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GREAT LAUNCH ISSUE

Is Alan Sugar crazy? *– the absolute truth on page 12 (honest)*

NEW COMPUTER EXPRESS

First news, first reviews – every week

ATARI DECLARES SOFTWARE WAR

The big surprise in store for Amiga owners

Full story page 2

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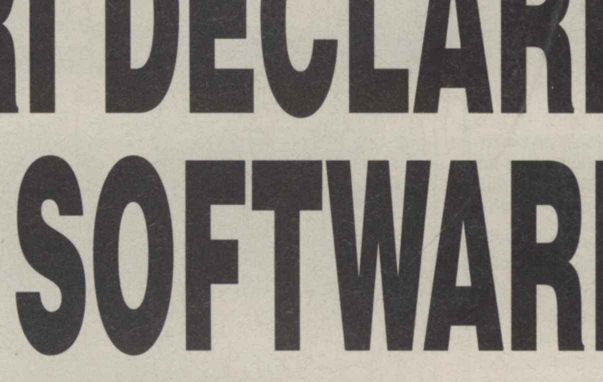
- **Amiga**
- **BBC**
- **C64**
- **CPC**
- **MSX**
- **PC**
- **PCW**
- **QL**
- **Spectrum**
- **ST**

SCOOP!



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We speak to the people who'll decide – page 17

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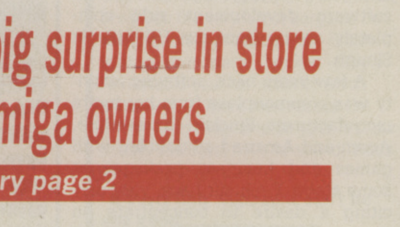
Christmas number 1?



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ATARI PREPARES SOFTWARE ASSAULT

"I expect us to be competing with the likes of US Gold" – senior Atari figure

Atari is about to unleash a major assault on the software market with games and business programs due for all leading machines – including arch-rival Commodore's Amiga.

Four separate labels are to be unveiled, covering specific software areas. Atari is currently despatching games scenarios and the like to numerous software developers. Programs are also being imported from Europe and North America.

Over the next year 24 titles will appear on the ST, nine on the PC and another nine on the Amiga. The games will also be licensed out to interested parties for release on the Spectrum and C64.

Atari is hoping that its name and financial clout can propel it into the software superleague of the likes of US Gold and Ocean.

The firm also argues that its hardware push up market will provide a platform for PC software sales.

The four labels consist of Atari Frames (arcade games), Atari Mindgames (intellectual games and puzzles), Atari Battlescapes (wargames) and Atari Hyper Series (business and graphics packages).

Atari Frames will kick off with some 16-bit conversions of old Atarisoft 8-bit games such as *Star Raiders*. New games are being developed by Liverpool based programming house Frames (hence the name). Frames' past experience includes work for the Imagine label.

Mindgames' first offerings include Japanese board game *Go-Moku* as well as *Backgammon*. Battlescapes, it is claimed by Atari, will cover "wars from Trafalgar to the future".

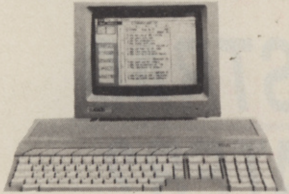
On the business front Atari has immediate plans for graphics programs, as well as Calamus DTP from Germany, a database from Canada and another package from Poland. First up though will be an ST paint program.

One senior Atari figure told Express: "An awful lot of development money has gone into this and I expect us to be competing with the likes of US Gold. As a hardware manufacturer we've come to accept that we can also be a software house."

On the droll notion of producing software for the Amiga from arch rival Commodore, he said: "It's always nice to be able to make money out of them."

He added: "By next Christmas, people will look at us as a powerful software publisher. We want to be as independent as possible." To that end Atari is planning to move its software development side completely away from its UK HQ in Slough.

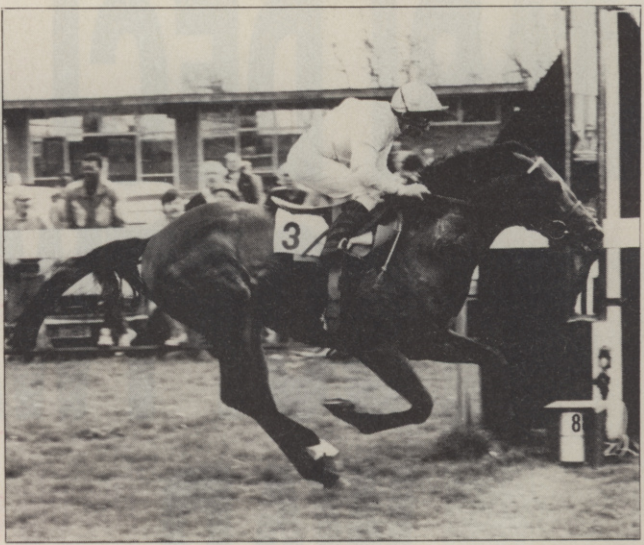
A few years back, software activity was commonplace from hardware manufacturers. Sinclair, Commodore, Acorn and Amstrad all dabbled with games and business packages at some stage. Each cut back, variously citing a desire to concentrate on hardware, financial difficulties or problems in attempting to compete with software specialists.



● ST: 24 new packages from Atari over the next year

Only Amstrad is currently still active in software, though on a much more modest scale than before. For Atari, the move represents a return to the days of Atarisoft – though that name won't be used this time round.

Gambling Cascade stakes reputation on bookies' bet



High street bookmaker William Hill has thrown down the gauntlet to software house Cascade which claims that its horse racing tipster program has a 72 per cent success rate.

William Hill is offering Cascade £50 in free bets. If the *Form Master* program makes a profit then Cascade gains the winnings (and the prestige). If it fails to score then William Hill feels it has made its point.

Either way the bookie is donating the money to a charity of New Computer Express's choice.

The duel is taking place this Wednesday with a computer set up in William Hill's Harrogate branch – near Cascade's offices.

The challenge comes as a direct response to Cascade boss Nigel Stevens claiming that major bookies are displeased about *Form Master*'s success. Allegedly, Cascade's longest losing streak is only nine races.

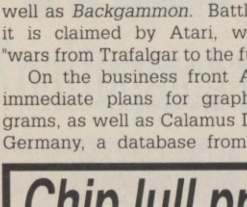
When contacted by us, William Hill's Graham Sharpe retorted: "People have had systems since the year dot and we're still in business. There's no way we would be concerned by this gentleman's computer program."

Nevertheless, Cascade reckons that the Department of Trading Standards has given *Form Master* the 72 per cent success rate. One employee at the firm claimed to be £900 up on 50p and £1.00 stakes.

But Stevens warned that *Form Master* is best for a whole season and could not be tested properly on the basis of five bets. He said Cascade would take up the gauntlet to enter the spirit of things.

Form Master is currently available through mail order at £99.95. It should be in the shops by Christmas on most major formats.

Chip lull prompts Opus chop



● PC III: Back to the past

Just the merest glimmer of hope on the chip front has been signalled by PC clone manufacturer Opus.

Abiding D-Ram chip problems have variously made chips scarce, expensive, or both for micro firms this year. But now Opus has detected a lull, and has lopped £100 off some of its machines. The PC III reverts to £995 and the PC V is back down to £1,295.

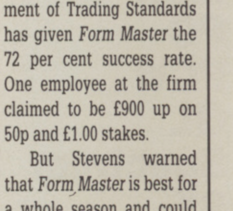
Prices were originally increased by the firm in the spring, in line with the Amstrad and Atari hikes.

Return of the Ultimate Wulf

Golden oldies from Ultimate such as Atic Atac and Sabre Wulf are soon to appear as 16-bit games courtesy of new software house Chrysalis.

And hard-nosed 2000AD character Rogue Trooper has once again become the focus for an ambitious computer game project via a Chrysalis licence deal with IPC magazines. The original game was published by doomed software house Piranha and failed to impress. Chrysalis' version is promised to be "completely different".

The original Spectrum versions of Atic Atac and Sabre Wulf (circa 1984) were number one hits for Ultimate and will be on the ST and Amiga by next Easter.



● Sabre Wulf: now 16-bit

● PC2000: Early arrival

AMSTRAD PC2000: HERE AND NOW!

Amstrad's new range of 286 PCs has arrived in the UK – months earlier than publicly stated by Alan Sugar himself.

As of this week the machines are available in 80 Comet Business Centres across the country. This conflicts with earlier gloomy statements from Sugar that supplies would be slender until the new year. When the PC2086 line up was unveiled on September 13th he warned that the continuing D-Ram shortage would hamper availability, saying that few would be here until January at the earliest.

One explanation for what has happened with the PC2000s is that Amstrad had publicly painted the picture blacker than it needed to, in order to make the eventual "early" arrival seem like a victory against the odds for the firm. This was foreshadowed in a confidential document obtained from Amstrad at the time of the launch. It contained shipment expectations which directly conflicted with Sugar's own public view.

Comet is selling four models of the 286 ranging from the £749 double disk drive mono version to the £1,249 hard drive colour monitor machine.

As a supplier of Amstrad computers Comet is becoming increasingly important. It is already the exclusive seller of the low end Amstrad PC 200. It has been suggested that previous Amstrad favourite Dixons has fallen from grace having filled its shelves with competitors' machines such as Olivetti's low cost PC.

To Beeb or not to Beeb

The much talked about BBC emulator for the Amiga will cost £50 when it finally becomes available at the end of this year.

A prototype will be on view at next week's Commodore Show with Commodore itself boasting that it will run Beeb software on the Amiga faster than the Beeb itself.

There has also been talk of the emulator being bundled with the Amiga at some stage in the future. Commodore is merely calling that "a possibility".

Currently, the software is working under the name *Beebulator* although that will be changed. Commodore's top brass feel it's "too frivolous" for the stuffy education establishment toward which the emulator is being aimed.

Shoot from the Lip... *the week's most quotable sayings*

"Konix could easily be the next Amstrad, I honestly believe that. What's more, they'll be bigger and better than Amstrad."
Bruce Everiss of Codemasters (and not of Konix. Well, not yet...)

"The PC 200 is mediocre at best and the CGA graphics are just appalling for games. To the argument 'It may be rubbish but look at all the software', I have to say 1. It is rubbish 2. No, there aren't so many games and 3. If you stand it side by side with an Amiga or an ST, you'd have to be a real idiot to buy the PC 200."
Jack Schofield, editor of the Computer Guardian

"Computer games are very boring when viewed from the outside. They're very dry when compared with Top of the Pops. They've still got some of the spotty kids in the bedroom about them."
Programmer David *Elite*, *Virus* Braben

"Essentially, PowerProject *provides the most significant innovations in project scheduling and time-planning software since the 1950s."*
Asta Development, making the rashest claim this century

*"You want my view on the future of the market? You ain't having **** all. I know **** all about the market and there's no ****** way I'd tell you."*
A senior Amstrad person who will remain anonymous if he sends a cheque to Express Blackmail Corner at the usual address

NEW COMPUTER EXPRESS

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Anyone shopping for computers, add-ons or software should look no further than the ad pages in this magazine. For two reasons:

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FUTURE PUBLISHING

Magazines programmed for the '90s.

The write stuff for your PC

Computer users will soon be able to write longhand onto their PCs.

Wang has launched a system called *Freestyle* which enables users to write on a plastic pad using a lightpen. The data then appears on screen. Voice comments can also be transmitted onto the monitor.

Wang is is claiming that Freestyle will revolutionise documentation and is reckons its "as easy to use as writing on a piece of paper or picking up a telephone".

Now the bad news. The system, including plastic tablet, pen and software costs around £1,200 with a voice module weighing in at just under £1,000.

Wang expects *Freestyle* to be here by early spring. It works on any high resolution mono, or black and white monitor.

● Freestyle: Write on?

SHOCK SEX HYPE SCAM PROBE

Adult computer games are being imported from America by UK company A-Soft.

Its boss Tim Harris sees a growing market for titles such as Sex Vixens from Outer Space. Based on graphics and text, the adventure game is claimed to feature plenty of nudity and squalid innuendo.

However, this appears to be little more than a scam. Harris admitted to Express that "the sexual aspect is just a bit of hype".

He added: "It took me four days before I saw anything worthwhile." Nevertheless A-Soft is set to continue importing these games from the States with a new one appearing every ten weeks.

Amiga-owning pervies wanting Sex Vixens *will have to pay £24.95.*

FROM SPACE
Free Spirit
Software Inc.
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● Vixens: A scam?

AMIGA GAMES CONSOLE PLANNED

EXPRESS EXCLUSIVE

by Colin Campbell

Commodore is planning to launch a low cost games machine based on the Amiga.

Developments are under way in the US but it is understood that the machine is still at an embryonic stage. Details such as price and time of availability have yet to be decided.

There has long been talk of a C64 console – but with Atari, Sega and Nintendo launching 16-bit games machines this would have been seriously outdated. It is known that Commodore has been disturbed by Nintendo's extraordinary success in the States.

Some have argued that the Amiga's profile as a multi-purpose computer would be damaged by the arrival of such a machine. Commodore itself has argued in the past that it is a computer firm, rather than a games machine company.

Nonetheless, well-placed sources have told Express that a console is due in the next few months. One possible launch date would be January next year, at the Consumer Electronmics Show in the US.

Commodore's UK boss Steve Franklin would neither confirm nor deny that any console plans exist. But he hinted that any console under development "wasn't a C64" adding: "I can't say any more than that."

16-bit: the console giants begin to stir

Commodore's news follows 16-bit developments from all the other major console firms.

● Atari: As revealed by Express last week (in preview issue bundled with ACE magazine) Atari plan next year to be launching an ST console at under £100. That should be here in force well before Christmas '89.

● Sega: A 16-bit console should arrive in the UK by September. It will run existing Sega software.

● Nintendo: A new machine is claimed to be ready but it won't be seen here for two or three years. The company is waiting for a software base to develop.

● Konix: Though not 16-bit, Konix's first console is believed to be scheduled for launch early next year with a price tag close to £150. Pre-production versions are currently understood to be wowing software developers.

TOP TEN full price

				SPECTRUM	C64	ST	AMIGA	PC	AMS CPC	ATARII	MSX	C16	BBC
1	*1*	Last Ninja 2	System 3	●	●				●				
2	*2*	Daley Thompson's Olympic Challenge	Ocean	●	●	●	●		●				
3	*5*	Football Manager 2	Addictive	●	●	●	●	●	●				
4	*8*	Out Run	Sega/US Gold	●	●	●			●				
5	*N*	Fists 'n' Throttles	Elite	●	●				●				
6	*14*	We Are The Champions	Ocean	●	●				●				
7	*7*	Supreme Challenge	Beau Jolly	●	●				●				
8	*3*	Starglider 2	Rainbird			●	●						
9	*12*	Gold Silver And Bronze	US Gold	●	●				●				
10	*18*	Taito Coin-ops	Ocean	●	●				●				

Italics – last weeks position

COMPILED BY GALLUP

TOP TEN budget

1	*1*	Joe Blade 2	*Players*
2	*2*	Bomb Jack	*Encore*
3	*5*	End Zone	*Alternative*
4	*N*	Commando	*Encore*
5	*11*	Gauntlet	*Kixx*
6	*9*	Footballer of the Year	*Kixx*
7	*3*	Air Wolf	*Encore*
8	*4*	Ace of Aces	*Kixx*
9	*16*	Advanced Pinball Simulator	*Codemasters*
10	*7*	European Five-a-Side	*Firebird*

Italics – last weeks position

D-RAM WINDFALL BRINGS FORWARD NEW ATARI PCs

The launch of Atari's PC4 and PC5 machines has been brought forward by three months as a result of the firm easing its dire D-Ram chip supply headache. The supply improvement will also allow more STs to be put on sale before Christmas.

Atari says that its D-Ram problem has been solved following agreements with two chip manufacturers – German based Siemens and a Far Eastern firm.

Chip problems have constrained the firm for much of this year. Availability of the PCs has been delayed with those D-Rams in Atari hands being used in STs.

The improvement in ST supplies is a direct contrast to the situation this time last year. Shortages were rife and at one point Atari was actually forced to airfreight batches of machines into the UK. Hardware manufacturers though are renowned for wailing about shortages since such talk generally aids sales. This policy appears to have been rejected for the coming selling season.

The PC4 286 and PC5 386 will be generally available from the end of this month with retail prices of £1,299.99 and £2,999.99 respectively.

Efficient chips

Never mind the D-Ram chip shortage – the super chips are coming. Wee beasties the size of a fingernail which can store the contents of more than five average paperbacks are due to tested by Japanese giant NEC. Or, to put it another way, these chips can hold 16 million bits of basic information – around 600,000 words. And to put that another way, around half a year's worth of this magazine could be fitted onto a single chip.

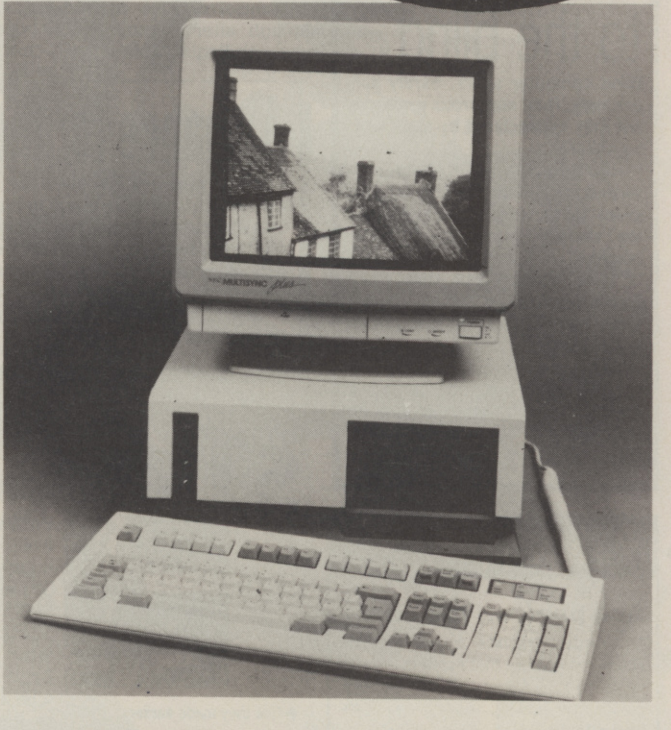
The new machines

PC4

80286-based microprocessor; switchable clock speed 12MHz to 8MHz; 512K RAM expandable to 1Mb; VGA, EGA, CGA, MDA, HGC 720 x 348 mono graphic, 80 x 24 mono text; 5.25" floppy disk; external connector for ST and PC drives; two serial ports; and one parallel port.

PC5

Intel 32-bit 80386; clock speed 6MHz and 16MHz; 1024K of RAM; 64K of ROM; 5.25" floppy disk; optional VGA, EGA, CGA, MDA and and HGC; and optional mouse, serial port and parallel port.



● PC5: Atari cashes its chips.

Ocean picks up The Gauntlet...

Ocean's penchant for licences continues with the news that kids' TV show *Run The Gauntlet* has been tied up.

Featuring a whole range of weird amphibious vehicles and off beat racing events the game, it is claimed, will stick closely to the TV formula.

The show has gained some success amongst younger viewers with a series of motor buggies, water cycles and difficult courses.

A game though won't be seen until next Easter – about the time when a new series starts.

This latest deal follows Ocean tie ups for Schwarzenegger movie *Red Heat* and gangster film *The Untouchables.*

...and Grandslam grabs Greavsie

TV soccer dinosaurs Saint and Greavsie are to appear on a computer game next Easter.

Grandslam will be forwarding the twosome in a sports quiz title similar to the board game. Always one for the licences, Grandslam is reckoned to have forked out a fair whack for the use of the names.

Meanwhile, the firm is on the verge of tying up another footballing licence likely to appear at around the same time as Saint and Greavsie.

● Saint and Greavsie: Doing the quizness

Multi-tasking? Logotron's game

How useful is a multi-tasking game? Logotron reckons it's a corker of an idea and in an attempt to prove it, is launching the first such offering for the Amiga.

Prospector from Logotron is in fact a broader version of maze game *Xor* already available on 8-bit machines and the ST. This version though has been tweaked hither and thither with a few more mazes and the like. Also, those who undertake low level productivity work on their Amigas can dip in and out of the game at will – that at least is the theory.

"You can do a couple of things at once," offered Logotron's Herbie Wright. "People working on their Amiga might feel like some recreation so they can easily spend half an hour on *Prospector*."

Digging the Amiga

The impossibly cold months are upon us and outdoor activists are scuttling into shelter – not least among them are the archaeologists.

Diggers working on an Anglo-Saxon and Roman site in North Yorkshire are keeping busy by studying the entire site on an Amiga. A 2D map of the whole seven acres is kept on an A2000's database and archaeologists can zoom in on any particular area and go into full analytical mode.

Also, they are keeping video sequences and stills of finds on the machine. That whole caboodle is soon to be presented as an education database for budding antiquarians to ponder over.

ARCADES: ST GAMES 'NOT GOOD ENOUGH'

Games written for home computers aren't yet good enough for the arcades.

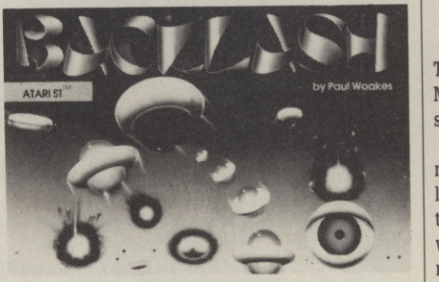
That's the view of would be games to coin-op converter Alan Nelson. His company East Midlands Leisure has spent the best part of this year trawling around the publishers for software to use in ST based coin-op machines. The idea was that games could be changed regularly within the cabinets by simply swapping software.

However the games haven't sparked, taking an average of only £1.20 a day – something like a quarter of a normal arcade machine. Nelson says most software doesn't grab people in the same way that the Japanese coin-op games do. The games involved include:

- *Thunderbird* from Elite – one of the least popular.
- *Backlash* from Novagen – "boring" says Nelson.
- *Barbarian* from Palace – high yield but still falling short of expectations.

Nonetheless Nelson is undaunted. He claims to have found a lack of enthusiasm from the software houses themselves. One deal which fell through after lengthy negotiations was with English Software (US Gold) for the old favourite *Leviathan*.

He's hopeful to sign up Logotron's *Star Ray* and *Better Dead Than Alien* from Entertainment International. "The response for the others has been poor. I believe ST games can run on arcade machines. We just need games which can be taken at face value."



● Backlash: Too boring for coin-ops?

A chance for the boss to do better

Spare a moment for the boss. It's possible that he may even be aware of his shortcomings in handling employees.

With this in mind Ivy Software is offering six £50 PC packages geared to helping managers handle their people properly. The menu driven course is said to cover most of the potential "them and us" disasters and includes written tests.

If you see one of the packages in your boss's office, you'll know he's trying.

IBM: patents are a virtue

Taiwanese PC clone manufacturer Mitac has followed Amstrad's lead and signed a patents agreement with IBM.

This, in theory, gives both companies the right to use each others intellectual property. However, central to the deal is IBM's PS/2 technology which Mitac will be using for a new range of machines currently under development.

The deal will cost Mitac between one and five per cent of all sales depending on the product and where it is sold.

Also, IBM has gained a one per cent royalty on all prior Mitac PC sales as recompense for the use of its patents. IBM has long been threatening that it will seek compensation from companies infringing patents without prior agreement. It has been trying to use the lever of PS/2 rights being dependent on paying an MS-DOS royalty.

Although a number of leading manufacturers have signed PS/2 rights, there is still a body of opinion that the new standard faces a long struggle before it can be deemed to have succeeded.

Programs which speak to the blind

Blind computer users, hardly surprisingly, face numerous problems not fully appreciated by most software houses.

So developer ACK Data presented its Text to Speech PC program to various associations for the visually handicapped to be tested.

They pointed out that when errors occur blind people cannot know what's going on. On screen error messages are useless.

The upshot? ACK is now revising the £300 program so that it uses its speech facility to explain and help put right any errors as they occur.

Snippets

Ace pack on the cards

Archimedes graphics freaks may be interested to learn that Ace has upgraded its £45 3D Euclid package to incorporate new lighting, shading and contrast effects.

Amiga to hear more

A new music composition language which uses straight code as opposed to hanging notes on bars is soon to be launched by Ariadne for the Amiga. Opus 1 should suit seasoned midi buffs and will cost around £50.

Hybrid drives hard bargain

A range of hard disk drives for the Atari ST will soon be available from music specialist Hybrid Arts. For those on a tight budget it's worth noting that the entry level desk top HDX77 Megabyte version costs £1,449.95. Yes, really.

"The magazine coming in on platform 7 has totally vanished."

ATARI ST USER

● One they made earlier

British Rail has found itself in something of a tight spot after losing an ST User.

Not the person that is, but the monthly magazine. Publisher Database entrusted the whole December edition to Red Star which had the presumably simple task of delivering the finished lay outs to its printer. Much to the dismay, even horror, of Database, the thing was mislaid.

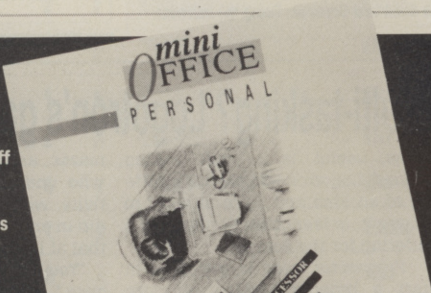
Database's unfortunate journos had the unenviable and frantic task of redoing the whole edition of ST User. Hardly surprisingly the publisher is absolutely livid with BR and is taking legal advice in order to gain "not insubstantial" compensation.

FIVER FAVOUR

Two Mini Office programs for the ST have had a fiver lopped off their price – before they've even been launched.

The spreadsheet and communications modules have both been dropped from £29.95 to £24.95. Publisher Database puts this down to "recognising that at the lower price more will be sold". Or, to put it another way, recognising that at the higher price rather fewer would be sold.

Each of the budget priced modules is complete with the likes of a text editor and calculator. Database reckons it's cheaper than anything else available and "technically more advanced".



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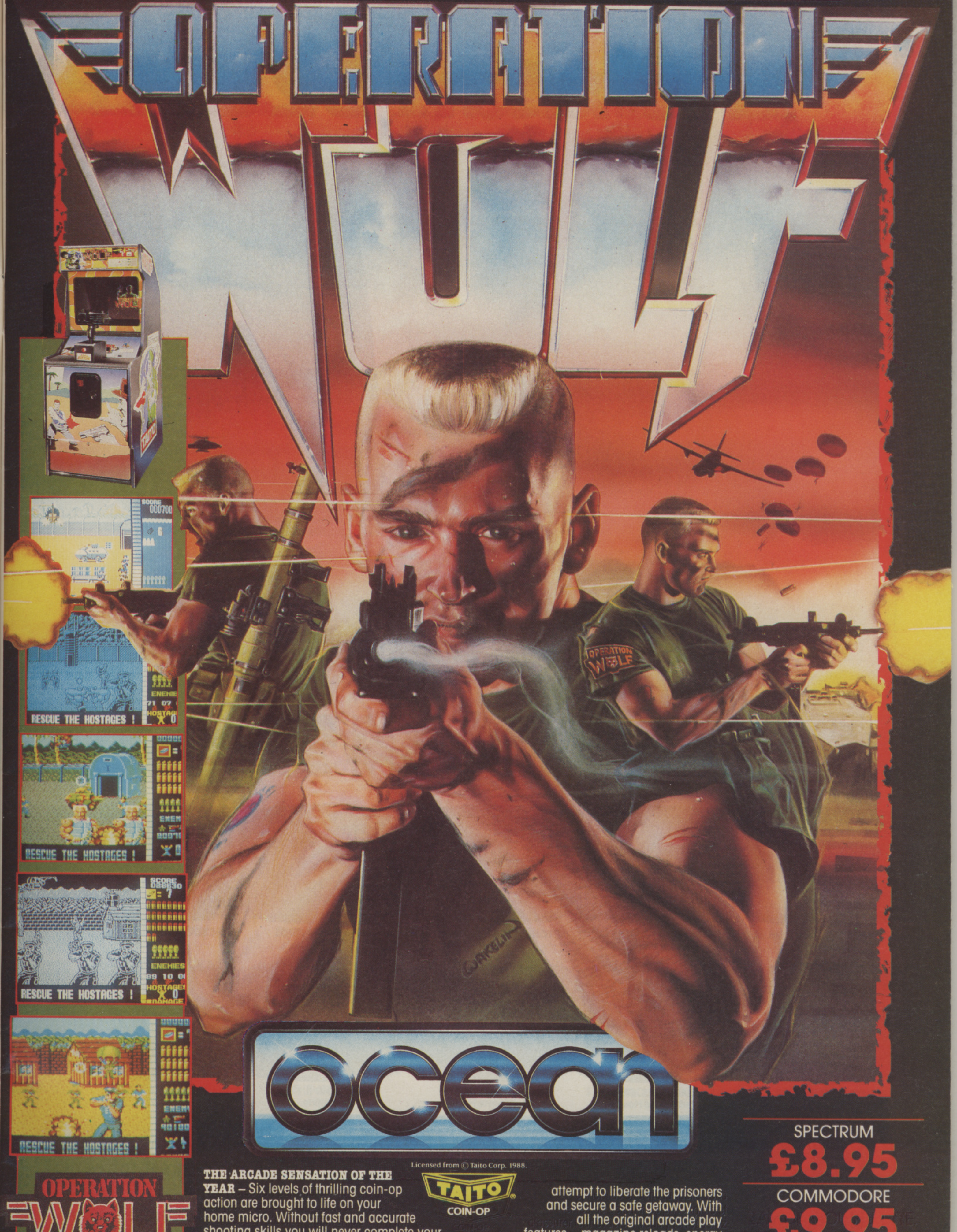

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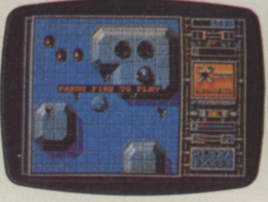

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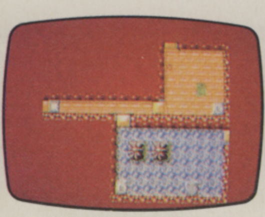
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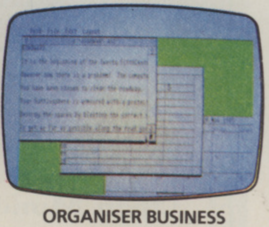
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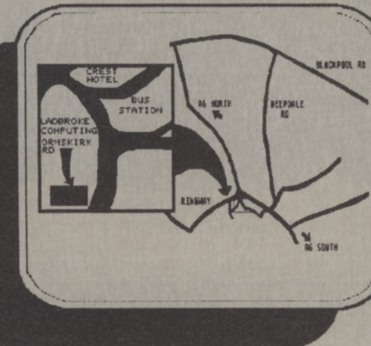

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A school crammed with Archimedes

As 180 11-year-olds begin lessons at the first of a string of heavily computerised schools, COLIN CAMPBELL tunes in to a debate which could crucially affect both education and computing in Britain.

A new era in learning is being ushered in by the Government's education officialdom, and with it a new model student – the fully computerised version.

Its flagship is a 'new' school in Solihull – Kingshurst – paraded as the first City Technology College.

In essence, the establishment is an extraordinary learning centre crammed with Archimedes computers, a barrage of technical trappings and a modern office look throughout quite alien to the familiar classroom structure. Mr Chips has finally been replaced by silicon chips.

The Department of Education and Science is planning two more CTCs next year and others to follow.

Not surprisingly, the arguments are furious. Education traditionalists say that computers, whilst necessary, are only a minor aspect of schooling.

Industrialists say that a complete overhaul of the system is needed to produce a computer-literate generation of fresh faced employees.

Heaven sent

In the classrooms of Kingshurst, pupils are kitted out with masses of Archimedes, many of which are networked across the school. There's also talk of providing the students with computers for the home at discount prices. Acorn can only raise its eyes thankfully to heaven.

Then there's expensive kit in the science and languages departments (including satellite TV).

Subjects in which computers are used during lessons include the sciences, mathematics, geography and even English. Whether *Daley Thompson's Olympic Challenge* will replace athletics isn't yet clear.

The Government is funding the CTC project through industry. Well, that's the theory. Industry hasn't been so generous as had been hoped.

Each school costs between £6 million and £7 million to set up. A fistful of companies mostly based in the midlands (or with plants there) contributed about half that figure.

Best of British?

The choice of the Archimedes and, to a lesser extent, Research Machines, is an obvious one. The government has long believed that education would be better served by British companies (even if Acorn is a wholly-owned subsidiary of Italian firm Olivetti).

Still, US firms also have a look in. There's an IBM mainframe installed at Kingshurst as well as PS/2s using 2.11 version of Novell. And the Amiga is under review for CTC art and design departments.

In the North of England, the 'hands on' ratio of students and computers is 70:1. In the CTCs it's likely to be 4:1 or even less.

Nationwide, schools have an average of 18 computers – many of which have seen better days. Kingshurst has well over a hundred brand, spanking new micros.

Logically, that would suggest that the CTC students will step out armed with rather more than GCSE passes. And, it follows, they'll have rather more than their counterparts in the likes of Archbishop Grimshaw Comprehensive.

The employers of tomorrow will be left to decide whether or not CTC is a euphemism for grammar school.

Three voices in the debate

● The Politician

Like his superior Kenneth Baker, JOHN BUTCHER has moved over from the Department of Trade and Industry. His background is in the computer industry.

Why were these schools introduced?

"People need to be aware of the computer as an all-important tool. It affects every business, industrial and management process. There is a need to be aware of what they do. No 16 or 18 year old school leaver should have any reason to be afraid or nervous of computers – which was the case in previous years."

But isn't this wealth of technology being dished out to the select few to the detriment of other schools?

"There is a very generous provision of computers across the state sector in secondary and junior schools."

Are the CTCs a technology-led form of the old grammar school system?

"CTCs are not selective. There is no 11 Plus. The recommendation for students comes from teachers together with the express wishes of parents."

Have you been surprised by the level of criticism aimed at the CTC scheme?

"Not at all. It's the usual forces of opposition locking in. Parents in Labour-controlled local authorities don't like anything that smacks of speciality or excellence..."

● The Local Headmaster

MICHAEL CORRIGAN is the principal of the largest Comprehensive in Solihull – Archbishop Grimshaw. It currently has some 3,100 students and is kitted out with some Beebs and an Archimedes. Corrigan sees this as sufficient.

What's your objection to the CTCs?

"To put so much into one school is immoral and not cost-effective. It's a kick in the teeth for the comprehensive system and it's been created in the teeth of verbal opposition.

It's part of the current philosophy that State education is a failure. The CTC is a flagship which Kenneth Baker has pinned his colours to."

Do you expect the CTC to affect the average intelligence of your pupil intake?

"I expect we'll lose a few but not too many. But it's difficult for parents to resist all the hype and media coverage. It's hard for parents who want the best for their children."

But isn't it good to use computers in this way?

"With the resources available to us we've been able to make broad use of information technology with technical courses and media studies courses. But I don't think I'd want my 10 year old to be sitting in front of a computer all day."

● The Industrialist

ALAN CARTER is the chairman and managing director of Hiton international, a company which makes gear boxes. He donates £500 a year to the CTCs, presumably rather less than fellow sponsors such as Austin Rover and Hanson.

Presumably you support the CTC?

"I'm in favour of what the Government is doing, but it's a shame that industry has to pay. I mean it's a laugh. It's all wrong."

If you take that view why has Hiton become involved?

"I disagree with the way it's been done but you can't duck out of responsibilities. We haven't donated much but if everybody did something then we wouldn't have such a shortage of skills. That's a problem we face every week."

But will computers help increase the level of skilled workers?

"Frankly I'd prefer to see managers and engineers going in and having some input. I mean the world isn't about computers. It's more than that. Academics teach everything possible except how to earn a living."

Are you surprised by the criticisms laid at the Government's door?

"If you don't do anything you get criticised and if you do something you get criticised. I could rant for two hours over that..."

Dear Express,

EXPRESS MAIL

A PROUD OWNER

I'm the proud owner of a Tandy TRS-80 (with 16k memory expansion pack and added sound-board) and I'm disgusted to note that you have not devoted a single column inch *(apart from this one – Ed)* to covering this machine.

Are you oblivious to the fact that there's a huge body of incredibly active TRS-80 owners out there?

Aren't you aware of the remarkable programs now available for this machine, such as the *Noughts and Crosses* simulator released by my company DeadSoft only last year?

Dafydd Llangwynydd, Bridgend

✓ *Yes. No.*

I HATE YOUR GUTS

Dear Express

I use the word 'dear' solely because it is the traditional way of opening a letter. It is most definitely not intended as a term of endearment.

The fact is I hate your guts.

For years now I have been able to discover all the interesting bits printed in computer magazines without actually buying them. Whenever a new issue comes along I take great pleasure in flicking through it at Mr Bhopal's local newsagency, noting the bits of value and satisfying myself that I would be wasting my money to actually buy it. I have saved myself a fortune this way.

Now yours comes along, I try the same technique – and it fails. The fact is it took me an hour and a half to get through the first 22 pages and by that time Mr Bhopal was giving me even dirtier looks than the chap next to me perusing *Mayfair*.

How dare you pack so much into a magazine so that I now have to fork out 48p a week on it?! That money could have been well spent – on half a pint of a downmarket lager for example (I can make *that* last an hour and a half as well, you know, especially when it's my round next).

Please try to make your magazine a bit less interesting in future.

Ivor Meanstreak, Glasgow

✓ *We quite see your point, Ivor. No doubt there are other popular computing weeklies you could look at instead.*

PRINT TOO SMALL

I own an Amstrad PC and am overwhelmed by the quality of writing in the PC Update column at the back of your organ. Is Simon Williams a god? It seems incredible that an ordinary mortal human could know so much about so many things!

Please pass on the enclosed £50 note as a contribution to his expenses and then answer me this question: Why is it that you have to print the words of this genius in such tiny print? The only way I am able to read his column is by cutting out the page and inserting it under a microscope. This of course is well worth the effort, however one jog on the elbow and a whole paragraph may be passed over.

Yours in frustration

Mrs S Williams, Black Torrington

✗ *Simon denies being a god and we can confirm this. No god would be so unethical as to accept a £50 bribe – even from its wife.*

The print is small precisely because the writing is so good. There is a fixed, limited space for each of the 10 machine-specific colums (otherwise they'd take over the whole magazine) and within that space we want to cram in as much info as possible. Bigger print, fewer words.

NEW COMPUTER EXPRESS
INCREDIBLE WATSON! 2,000 WORDS A PAGE!

TEETHING TROUBLES

I have just bought an Amstrad PC 1640 to run my business but have not had much luck yet in actually getting the thing up and running.

The first thing I did when it arrived through the post from Boxshift Mail Order was unpack it and put it all together. But there's one cable I'm confused about. It has three coloured wires protruding from it – brown, blue and a sort of stripey green and yellow one. I have tried poking this into the disk drive slot because I had heard that pokes were important in computing. However, nothing seems to have happened.

Since my business involves offering investment advice to pensioners I would be grateful for your help as soon as possible.

Dr Matthew Golddigger, Broadmoor

✗ *You've baffled us with that one, Doc. Perhaps one of our readers can help?*

PEN PALS

Hi! I'm a 19-year-old Swedish girl just visitting England for a six month computor studies coarse. I lov to play games with my Atari ST and I have akcess to a wide range of softwear. Plez could you put me in contakt with other ST peeple in this area to carry out compatibility tests.

Ingrid Svendsen, Box 58, Soho

✗ *Nice photo, shame about the spelling.*

DISTURBED

Am I alone in being disturbed by the frequent use in your publication of the word 'programme' spelt without its last two letters?

Prof. Anthony Archibald-Smythe, Oxford

✓ *Yes.*

WICKED

Hey! Your mag is WICKED. The reviews are mega-cool and the voucher scheme is brill! I have cancelled my subscription to the *Beano* so I can buy yours every week instead.

R S Licker, London

PS. Do I win this week's prize?

✗ *No.*

PATHETIC

Your new rag is pathetic. Fancy having a computer magazine without any program listings. What are we supposed to do with it? *Read* it?

You must be joking.

Please cancel my subscription.

Adam Bonehead, Southampton

✗ *What subscription?*

CONFUSED

I am very confused about graphics standards on the PC. Just what does all this stuff about EGA, CGA, and VGA actually mean? And why is it that none of the 'IBM-compatible' programs I buy for my 'IBM-compatible' ever runs?

Please run a feature on this topic as soon as possible.

A Sugar, Brentwood

✓ *Yours is just one of thousands of letters we've received recently on this subject. By a remarkable coincidence we have the very feature you're looking for in this issue!! Page 29.*

BOREDOM COLUMN

DISGUSTING PRICES

I would just like to spout on for a page or three of virtually illegible writing about the disgustingly high price of games software it's no wonder so many people pirate games when it costs over £8 just to get one crummy title and even more on the Amiga which my friend has so why don't the software houses do something about it before (*that's enough spouting – Ed)*

Spotty Youth, Dorking

HOW DARE YOU

How dare you publish a picture of a Spectrum when everyone *knows* the machine is utterly useless??!! My Commodore 64 is *far better*, even if the Basic *is* pathetic and central processor *does* run at half the Speccy's speed. At least it has a decent sound-chip and doesn't suffer from attribute-clash and (*that's enough mud-slinging – Ed)*

Captain Zardos, Bognor Regis

TECHNOLOGY CONVERT

Being totally unfamiliar with computers, it was with enormous trepidation that, three years ago to the month, I bought my Amstrad PCW 8256 with a view to typing up the unpublished novel I've been working on in my spare time over the last 23 years. Yet my fears proved totally ungrounded. It took me only five weeks to understand the first three pages of the manual, and now I find I can load in a disk and type in a paragraph from scratch totally unaided in less than the time it used to take my secretary to finish off a complete chapter on her Remington portable!

Please find enclosed my life history and (for your interest) the first 22 paragraphs of the novel, all of which – as you can see from the dirty smudges at the top of the pages – have genuinely been printed out on the Amstrad PCW printer (except for paragraph 15 which I had to ask my secretary to re-type on her Remington because it contained a spelling error.)

I am now a total convert to the new technology and can barely wait to begin laying out my local golf club's monthly newsletter using a 'Desk Top Publishing' program I have recently ordered and on which I would like to ask the following 38 questions – I have enclosed a stamped addressed envelope for your reply and *(That's enough agony – Ed)*

Colonel Henry Bagshott, Cheltenham

IS ALAN SUGAR MAD?

What's going on at Amstrad? Is Alan Sugar mad?

Just look at the facts. In 1986 he snaps up rights to the Sinclair name and takes over manufacture of the best-selling Spectrum. His marketing people trumpet the fact that now Amstrad can use the Amstrad label for the more serious/boring business machines while the Sinclair label will do nicely to as a marketing angle for the thronging millions of youngsters from whom 'Sinclair' means 'game-playing computer'.

In 1987 he muddies the waters somewhat by bringing out the Sinclair Spectrum Plus 2 and Plus 3, neither of which manages to excite anyone particularly, although they can at least run Spectrum software.

But now in 1988 he goes and launches the 'Sinclair Professional', the so-called games machine that also has serious applications.

Games Machine?! Codswallop. This nasty little unit can only generate four colours. Four?!!! That's 12 fewer than the Spectrum managed in 1982. And what colours are they? Well, one of them is black and frankly that shouldn't count as a colour at all! And the other three are normally white – which also doesn't count – a nauseating light-blue so-called 'cyan' and an even more nauseating pinkish so-called 'magenta'! Can't even play *Pac-Man* properly on that setup unless you want one of the ghosts the same colour as the maze!!

Even the sound is little better than the classic Spectrum beep which at least had no pretensions. Frankly any existing Sinclair owner who thinks he's upgrading by buying that thing is in for a nasty shock.

C Sinclair, Cambridge

Mystery WINNER prize

✓ *Perhaps Mr Sugar has concluded Sinclair owners of old are now looking to do much more on a computer than just play games. Perhaps he thinks many of them are now on the lookout for an industry-standard PC, so why not offer them one bearing the Sinclair name they love so well.*

There again, perhaps he's mad.

Now it's your turn

Yes, we admit it. These letters are all made up. This is, after all, issue 1.

We'd much rather print genuine ones, so why not oblige by giving us your views on anything to do with the world of computing or New Computer Express itself. Writers of particular merit will be sent a **mystery package** of goodies for their computer!

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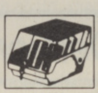
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Schneider are also distributing the 'Tower AT' range which consists of 14 models ranging in price from a remarkable £799 to £1999 +VAT.

The Schneider gambit

Peter Worlock, master of the PC clone, assesses the (very) aggressively-priced Euro PC.

The day of the PC compatible as home computer has been a long time coming but it's here with a vengeance now. Hard on the heels of Amstrad's Sinclair Professional comes the Euro PC from German manufacturer Schneider – former friends and partners now in head to head competition.

You can't get the price of a PC down to home computing levels without cutting a few corners in the process. So the question is, what exactly are you getting for your money?

Smart, modern appearance

Physically, the computer itself is a single unit, rather like an overweight PC keyboard, and includes a more or less standard keyboard but with twelve function keys rather than the usual ten. These are arrayed horizontally across the top rather than in the more common vertical position on the left.

The most noticeable difference is the wide extension on the right which houses a single 3.5 inch floppy disk drive offering 750K of storage. This faces forward, a better arrangement than the right hand side option used by both the Atari STs and Commodore's Amiga A500.

At the rear of the keyboard is a comprehensive collection of expansion ports, providing interfaces for parallel printer, RS232C serial for modem or printer, an external floppy disk drive, an external hard disk, and a mouse/joystick port. Sadly, no mouse is supplied with the machine.

The whole unit is styled in an off-white plastic with a raised rear edge diagonally slashed for ventilation giving the Euro PC a very smart modern appearance. If the competition between it and the Sinclair Pro was a beauty contest the Euro PC would win hands down.

Very nippy

Documentation is comprehensive and – unusually – well done. The introduction to the hardware is clearly written, with the welcome addition of complete pin out diagrams for all the interfaces. The MS-DOS and GW-Basic manuals are standard Microsoft but even these appear to have been specially typeset for Schneider and are much better than some I've seen.

Inside the machine (not that you're ever likely to see it) the main processor is an 8088 clocked at 4.77MHz, 7.16MHz and 9.54MHz and the speed cab be changed from the keyboard. This makes it very nippy at the top rate, but gives you the option of slowing down games and other speed-sensitive software.

Graphics are handled by a custom video adaptor built in to the PC and offering either Hercules compatible monochrome or CGA displays. The latter provides 16-colour text and four colour graphics modes, but text can be difficult to read over long periods. The Euro PC comes with either mono or colour monitor and the review machine was supplied with a 14 inch CGA unit that provided a sharp, bright, rock steady display. (The down side is that you can't buy a Euro PC without monitor, so if you buy an EGA display you'll have one more monitor than you need or want.)

Expansion problems

The Euro PC comes with 512K of main memory which is best described as adequate. Most PCs take up to 640K or 1Mb on the motherboard but because the Schneider is a closed box this isn't an option here. If you want more memory, you have to use an expansion card – and this is where the aforementioned shortcuts raise their heads.

The single greatest benefit of the PC standard is its expandability, and most PCs offer anything from three to five slots for expansion cards. However, those cards take up a great deal of space – and were obviously the first thing to go in the Schneider design. What you're left with is a single slot for a PC half length card.

Schneider has accommodated this in elegant fashion: a section of the case on the left side slides out revealing a standard card connector. Your card is easily slotted into place lying flat and horizontally across the case. The case section slides back into position, leaving the output ports from the card visible from the rear of the PC. This leaves Amstrad's solution for the PC200 looking like a bodge (because although the Sinclair takes two cards, you have to permanently remove the top of the case and have your cards sticking out where they are exposed to dust, prying finders and sudden impact from any stray object).

Give it the Works

Bundled software tends to have a poor reputation, often consisting of a rag bag of very old or second rate programs the are barely worth the price of the disks they're held on. With Microsoft Works however, Schneider has done buyers a real favour.

Works is a powerful integrated package offering word processing, database, spreadsheet with graphics and communications all in one. Each module is a full featured application in its own right, but you can mix and match data from each. It means that once you've added a printer to your Euro PC, you can immediately get down to some serious computing.

And since *Works* normally sells at more than £100, it makes the Schneider look like particularly good value.

The single slot limitation is really the key to weighing up the Euro PC. On the one hand, Schneider has already provided most of the things you'd normally use a slot for: mouse port, and serial and parallel interfaces. On the other hand, the slot is too small to take a hard disk card. You'll really have to think about what that slot gets used for. If you add an EGA graphics adaptor (highly attractive) you can't expand the memory. And so on.

And when the slot is filled, all further expansion has to be external. A fully expanded Euro PC promises to be a thing of supreme ugliness. And even the largest expanse of executive mahogany will vanish under the PC, a monitor, a floppy drive, a hard drive, a modem, a printer, a mouse and all the associated cabling.

Express Verdict

First there's the question of whether you want a PC compatible at all. If your main interest is playing arcade games, or dabbling in computer graphics, you'd be far better choosing an Amiga or ST. The Schneider is aimed at those with a more serious use in mind (although there is the growing range of PC games as an added bonus).

As a simple PC compatible the Euro PC has a lot going for it. At £399 for the mono version, and £549 for the colour, it's fast, it looks good and it gives you access to the enormous range of PC software. If your ambitions for the machine are low, there's not much to criticise. And the bundled copy of Microsoft *Works* is a definite plus.

HIGHLIGHTS

- ● Free copy of Microsoft Works
- ● Fast, relatively powerful entry level system
- ● Easy to set up and use
- ● Attractive design

DRAWBACKS

- ● Severely limited internal expansion

However, if you think you'll eventually want more from the machine, there are real problems. The lack of expansion slots, and the need to have lots of peripherals cluttering up your desk, make it much less attractive than a traditional PC compatible like the Amstrad PC2086, PC1640, or any of the dozens of other sub £1,000 systems available. ●

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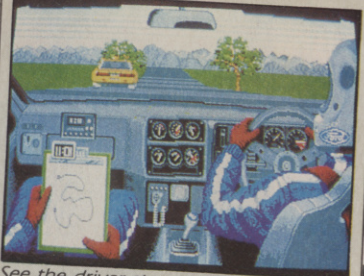

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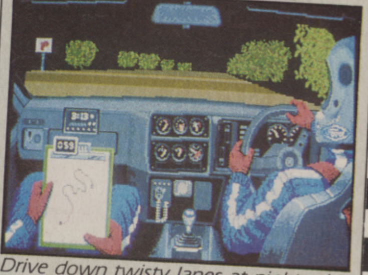

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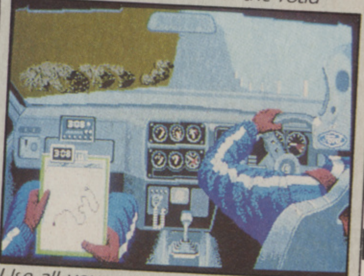

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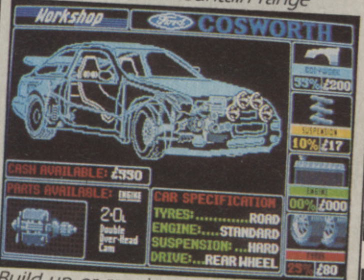

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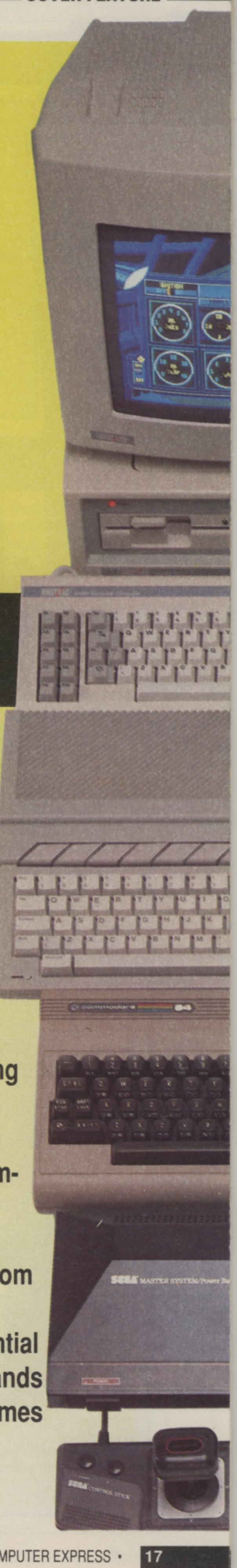


As 1988 draws to a close, the world of personal computing gives every impression of surging vitality.

◆ More people are buying computers than ever before.

◆ A wider variety of tasks is being entrusted to computers by a wider variety of users.

◆ Most areas of the market are reporting growth, excitement and a constant flow of remarkable new products.

◆ The terrifying plunge of 1984-5 which saw literally hundreds of computer-related companies go bankrupt has been all but forgotten.

But where is it all heading? Will the machines around today still be making the grade next year? In five years' time?

Are games consoles about to take the UK leisure industry apart?

Will IBM's PC standards further strengthen their stranglehold in serious computing?

Can 8-bit computers survive another 12 months?

And what about Atari and Commodore's 16-bit machines? Will they move from strength to strength or be swallowed by the all-conquering PCs?

We spoke in depth to seven of the UK computer industry's most influential people who offered intriguing, detailed predictions of where the four main strands of personal computing – PCs, other 16-bit machines, 8-bit machines and games consoles – are headed: .

Now you too can gaze into the future. ☞

☞ *Cont from previous page*

PC1640
ATARI

Sector 1. PCs – Will the mono-lith fragment?

DEFINITION: Any machine compatible with the personal computers produced by IBM.
EXAMPLES: Amstrad 1512, 1640 (pictured), and 2000 ranges, Sinclair PC200, plus numerous machines from Tandon, Compaq, etc.
FACT: PCs have massive domination in the business market worldwide. In the United States they are also the leading leisure machines (excluding consoles).
QUESTION: How will PCs develop in the UK over the next five years?

"The PCs dominate in the UK business market partly by default. The Mac has not been sold well over here, with Apple going for small numbers and high prices. But the domination will not continue: there'll be an increasingly bloody battle with the non-PCs making a strong impact at the lower level.

"PCs suffer greatly from what I'd call software drag. Companies can't afford to throw them out, and so the technological generations take much longer than in the games market. If you can sustain revolutions, you can have progress at a terrific rate. That's why home machines will become so much more powerful than small business micros, where they are committed to continuity, software portability and all that crap. IBM are having an awful time trying to persuade people that DOS was last year's thing. They've still got mainframes in place that people have been using since the 60s!

"PCs will also be eroded by the splintering of the market – that if people want say DTP, they'll choose the Mac; for music, the ST; and for graphics the Amiga. In any case in the future, the PC sector will not be as homogeneous. It'll actually break in half with the cheap DOS machines at the bottom. The top will split a further four ways: SuperDOS – the DeskView, Windows 386 area; OS/2 – simply because IBM and Microsoft are behind it, it'll make some impact (even though it shouldn't); Unix – because it clearly has a lot of advantages; and then the next level of Macintoshes.

"At the lower end, the PC200 is mediocre at best and the CGA graphics are just

Sector 2. 16-bit – Leisure takeover?

DEFINITION: A range of second-generation computers with very fast and powerful central processors.
EXAMPLES: Atari ST, Commodore Amiga.
FACT: STs have to date substantially outsold Amigas in the UK (perhaps 130,000 units to 50,000). But in most of Europe and America, the Amiga is the big winner.
QUESTION: Which machine will win long term? And how bright a future does either have?

"People are still finding ways to utilise today's generation of machines like the ST and Amiga. There's still a lot of life left with an expanding software base. They'll still be there in three years. In two years something new will come along but it will need to wait two years for an established software base – which is the lifeblood of hardware.

"In three years' time there should be a crossover point where RISC, parallel processing or 32-bit will become state of the art volume products.

"Much depends on the future cost of computer memory. The ST uses a 16-bit micro processor and to be effective it needs 512K of memory. To have a 32-bit micro you need to double or quadruple that. At today's memory chip costs, that would have a dramatic effect on its final price. But if semi-conductor supply meets demand and prices come down, people will get more power for their money."
Bob Gleadow

"Victory for either Commodore or Atari is both unlikely and unimportant. The competition between them matters more. Both will do better and more interesting things with their machines. If one wins, it'll be a disaster. Just look at how boring the education market became once the BBC took over.

"And it doesn't matter as much as people think that the ST and Amiga haven't done well in the States. In the old days the States used to account for 80 per cent of the computer market. Now it's less than half and declining. The days when if you didn't make it in the States it was a matter of great concern have gone for good.

"As for Amstrad, I wouldn't be in the least bit surprised if they produce the definitive 68000 based machine which given 15 minutes and a fair wind could run both ST and Amiga software."
Jack Schofield

"If only Archie were cheaper, it could really

Sector 3. 8-bit – Dead or alive?

DEFINITION: The original generation of home computers – relatively simple central processors and limited memory.
EXAMPLES: Sinclair Spectrum, Commodore 64 (pictured), Amstrad CPC.
FACT: Despite all the talk of 16-bit, the UK leisure computing market remains heavily dominated by the 8-bit machines (around 75% by value).

"The Spectrum and 64 are quite respectable games machines, even after all this time. They're as good as the Nintendo or Sega and they'll still do OK once their prices drop down below £100. But they're tape based – and all tape machines will die by next Christmas."
Jeff Minter

"Look at the 64. There's a machine that could've been dead two or three years ago. But we expect to sell 120,00 this year in the UK alone. That just shows you 8-bit is going to continue for some time because the software base is already there."
Steve Franklin, Commodore UK boss

"The 8-bit machines have been caught badly between games machines which are becoming more powerful and the 16-bit machines which offer you business stan-

Sector 4. Consoles: Primed for explosion?

DEFINITION: A computer without a keyboard, marketed as a game machine.
EXAMPLES: Nintendo, Sega (pictured).
FACT: The latest profits recorded by Nintendo exceeded the combined worldwide sales of all leisure software publishers.
QUESTION: Having conquered America and Japan, will Nintendo (and other consoles) now take over in the UK?

"People have finally become aware and accept that the chief use of computers in the home is to play games. The hope to program has now gone: hence the rise of consoles.

"Come the mid-1990s there will be a new super-duper all singing, all dancing console linked with CDI so that you can have real life videos. I also suspect that there'll be an increasing range of related peripherals, such as high definition TV screens and a mirroring of the arcades – tilt, swivel and more that will take you closer to a more complete entertainment experience."
Nick Alexander

"There's been talk of consoles becoming predominant for some time but nothing's happened. I think people want a home computer as a concept. People say look at the US but they have more spending power than us. Father has his Apple and the kids have a console. But that won't happen in the UK."
Steve Franklin

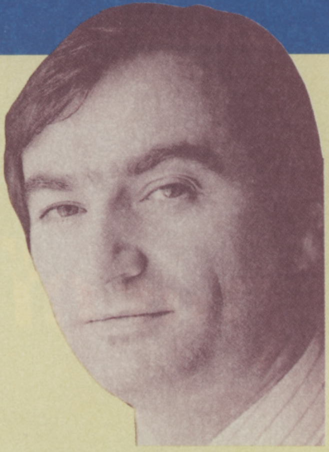
appalling for games. To the argument 'It may be rubbish but look at all the software', I have to say 1. It is rubbish 2. No, there aren't so many games and 3. If you stand it side by side with an Amiga or ST, you'd have to be a real idiot to buy the PC 200. The machine flies in the face of my thesis of nichemanship – that people are now using different computers for very different tasks, rather than using one machine for everything."
Jack Schofield, Computer Guardian editor

"We've had more than enough technological innovation. Even so, it will continue in the same vein. PCs will be sold cheap, bundled with cheap take it or leave it software. Off the shelves Tescos stuff – you only have to look at the States to see what will happen here.

"The most progress will be with laser printers. Everyone will have one and the dot matrix brigade will quietly disappear. The communications side will inevitably come up. But people still haven't digested the systems and software that they have now."
William Poel, business market pundit

"PCs are mutating into Macintoshes."
Jeff Minter, cult programmer

"Next year 80286 will be the volume seller. In two years, 80386 will be the volume seller. Don't forget that MS-DOS already has five years of power upgrades."
Bob Gleadow, Atari UK boss


● Gleadow: Speaking volumes

"PC games are definitely a goer, but not necessarily via the PC 200. It's in a very cluttered market and essentially the games impetus comes not from kids but from businessmen. That makes it a much older, much different market. It also means that the PC won't become the dominant games medium over here."
Nick Alexander, Virgin/Mastertronic boss

score. A cut-down version at £250-300 – but no, we're talking about Acorn."
Jeff Minter

"The attitude now is very much concentrated on graphics and images and visuals and less on gameplay. I would imagine that people will be more interested in having fun. For now though the market is plagued by plagiarism. Once someone has a good idea then it gets copied.

"Computer games are very boring when viewed from the outside. They're very dry when compared with Top of the Pops. It still has some of the spotty kid in his bedroom about it. I think in the next four years it will become more socially acceptable – probably through more powerful machines.

"But people simply haven't exploited 16-bit machines at all. There is a preponderance of 8-bit conversions and the only advancements have been *Starglider 2* and *Elite* [Braben's game] which is simplistic. Games like *Carrier Command* could easily have been written in 8-bit.

"The turning point will come when the quality of software isn't dictated by hardware restrictions but by creativity. Then it will be fun."
David Braben, state of the art programmer.

● Braben: Plagued by plagiarism

"One mistake that is often made about 16-bit is that it is viewed as new. Yes the Spectrum and 64 are six years old, but the ST and Amiga have been around for two, maybe three years already.

"By the '90s we'll be talking about Transputers and 32-bit games, which will be highly challenging for the software producers. Currently we seem to spend at least half our time trying to condense down what's been written into what's available. If there's a larger memory size then it won't in itself mean that our costs will have to expand enormously to provide the software to run on it.

"In any case it's much better to use only half the power of a Transputer and produce something at a price that everybody can afford, than a fully technology-driven product that no one can buy."
Nick Alexander

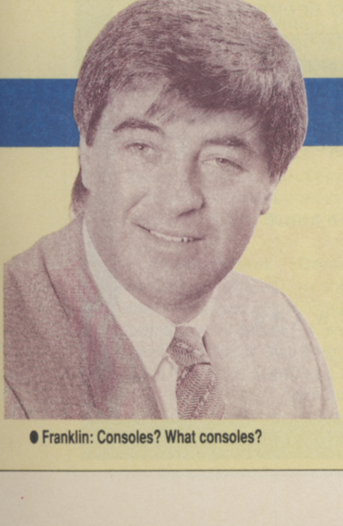
"I'd be very surprised if there aren't up to three quarters of a million Amigas in the UK by 1992. We expect to sell 90,000 this year. People are becoming more attracted to 16-bit machines and they're being used by young people who've never had a computer before. They appeal to a whole spectrum of age groups as well as the young not only because they're sexy machines with good graphics."
Steve Franklin

dard facilities. They'll be squeezed next year. The Spectrum has traditionally outsold the 64 here and it will be supported longer."
Bob Gleadow

"The Spectrum hasn't changed that much but its audience has grown younger. When it first came out there were quite serious people who were convinced that they could run their payroll packages on it: it wasn't just a games machine. Now I reckon it appeals to the 8-11 year old band, with the 64 reaching the 11-15 year olds. But though the 64 is a more sophisticated machine, it has never gone anywhere. It's still the same machine as it ever was."
Jack Schofield

"We're not seeing any dramatic drop off, but rather a long slow decline with a greater proportion of budget title sales. I don't think there are any real indications of the Spectrum or the 64 now appealing to a younger market. Possibly that will change in 18 months time if and when Amstrad brings out a £39 version of the Spectrum."
Nick Alexander

● Alexander: A long, slow decline

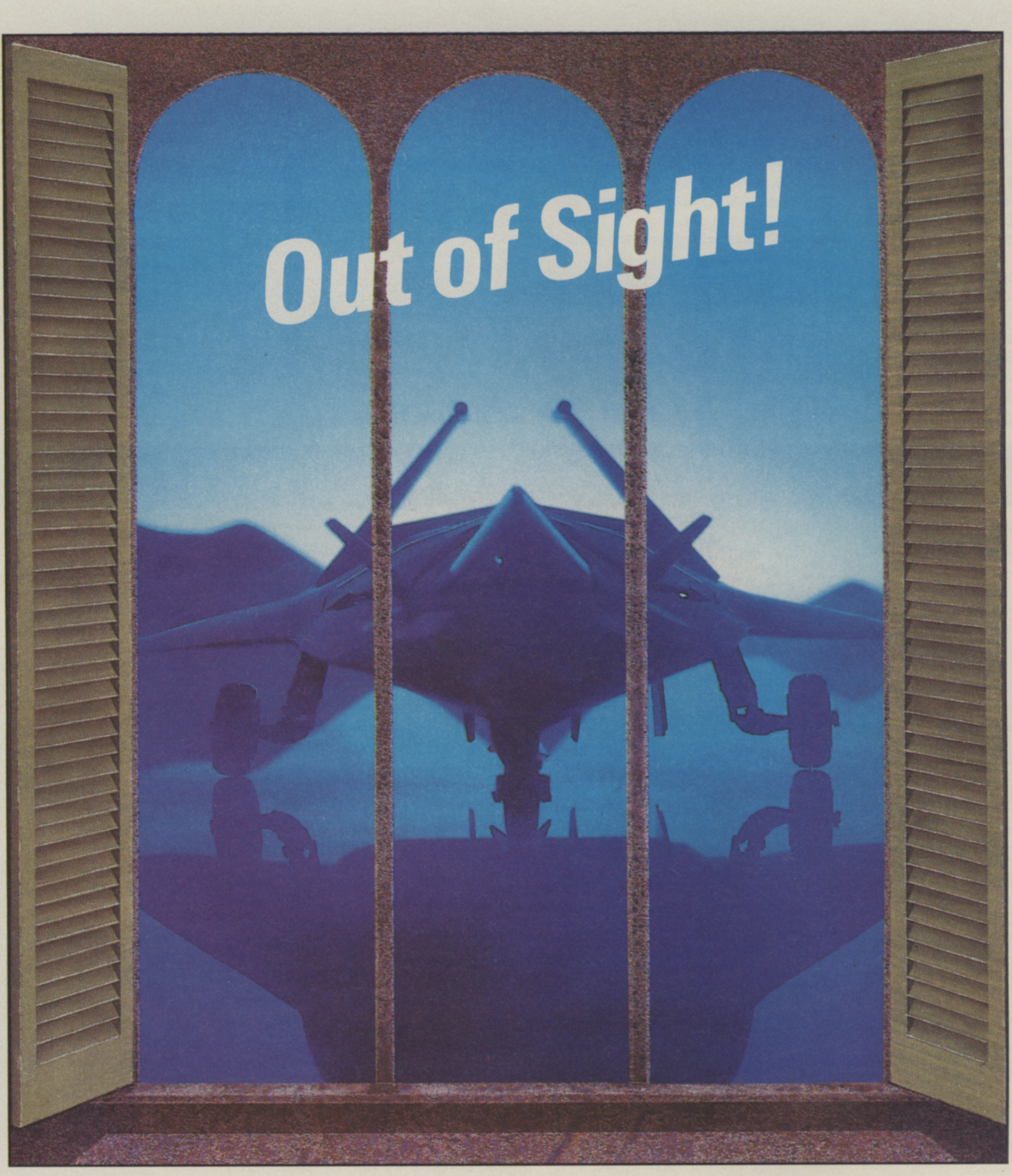

● Franklin: Consoles? What consoles?

"There are 32 million consoles worldwide and I wouldn't like to guess how many there will be in five years. People are going to have dedicated machines for dedicated tasks and they're not going to use the keyboard computer for everything just to justify the investment. They will use computers for legitimate computing purposes and consoles for gaming."
Mike Wensmann, Nintendo UK director

"The problem faced by Konix (*reported to be entering the console market*) is that British programmers are not as good as the Japanese. If Konix get that right then I know they'll do really well because they've got a tasty machine. Nintendo will come through when they actually get round to releasing their vast library of software. But the one to watch out for is the PC Engine. It's absolutely outrageously good and at £100 it should wipe the floor.

"Consoles are a good entry level for some people. But there are enough who'd just be bored shirtless who'll want to get on and do something with their machines."
Jeff Minter

"There are more and more kinds of machines for more and more niches. That doesn't mean that something like consoles are going to take over or replace home micros, but rather that the market will become increasingly diverse." **Jack Schofield**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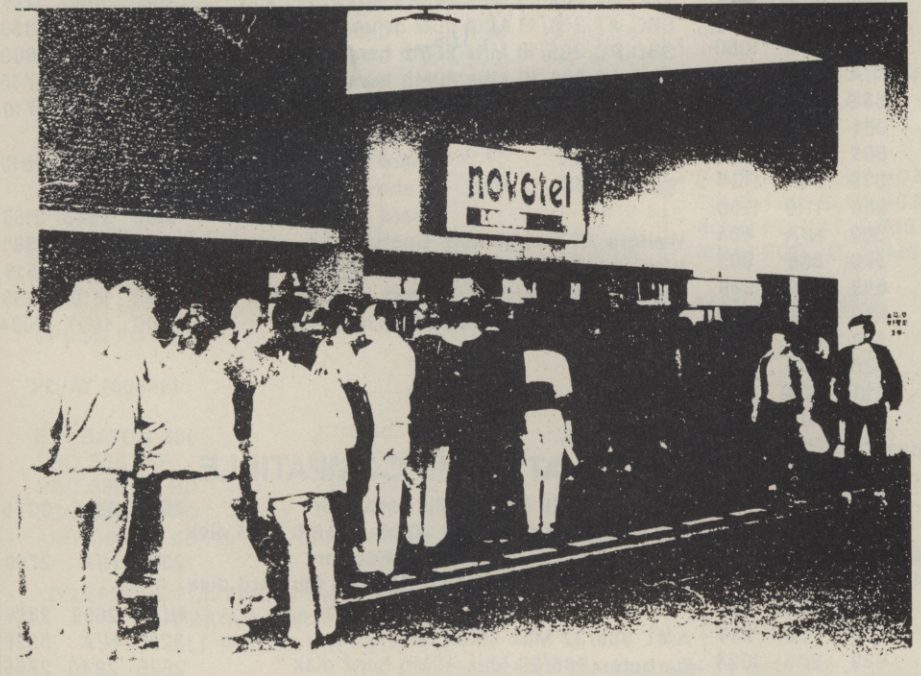
Commodore's Christmas Extravaganza

Commodore
computer show

RIK HAYNES previews the 12th official Commodore Show

The Commodore Show is back at its favourite venue later this month, boasting over 75 exhibitors and an exciting batch of new hardware and software. Coming just 30 shopping days before Christmas, it looks like an ideal opportunity to trawl for bargain presents.

If only the organisers would supply visitors with a Computer Show Recovery Pack – consisting of foot plasters, jostler's elbow soothing cream, aspirin (large bottle) and a four-ton truck to transport home all the leaflets, carrier bags and brochures collected during the day.



Commodore will parade its obligatory procession of famous stars (Adam Faith and Anita Dobson from the latest West End musical *Budgie* – among others) as well as its range of computer product. As usual, pride of place will be given to the Amiga, with a Graphics Workshop and Music Room (complete with industry experts) displaying the Amiga's audio-visual capabilities. Another new feature will be the Xmas Card Design Competition (using Amigas), with a daily prize awarded to the best entry. **Stand 44**

The Independent Commodore Product Users Group (ICPUG), in conjunction with Commodore, is celebrating ICPUG's tenth anniversary by presenting a series of seminars. Topics covered include: MIDI For Beginners, How To Get The Best Out Of A Database and Programming In COMAL. ICPUG will also host regular question and answer sessions on visitors queries across the entire Commodore range. **Stand 102**

Microdeal is using the show to launch several new Amiga games: *Turbo-Trax* (motor-racing simulation), *Fright Night – The Arcade Game* (based on the horror movie) and *International Soccer* (no prizes for guessing). Microdeal will also have its wide range of older Amiga titles (and latest addition to its repertoire: computer accessories) available for sale. Visitors to the Microdeal stand will also have the opportunity to talk to Steve Bak, programmer of many popular Amiga games such as *Goldrunner, Leathernecks* and *Return To Genesis*, now working on Microdeal's *Fright Night* game. **Stand 2**

Hisoft is due to launch its new Basic compiler for the Amiga which fully supports the Amiga's library routines and works within the Amiga's multi-tasking environment. Hisoft will also have *Devpac II* (full review in this issue), the new version of its popular assembler package for the Amiga. As an added bonus Hisoft will be offering older versions of *Devpac* at "very special prices", according to Hisoft's managing director David Link. **Stand 68**

Anco has a new selection of Amiga software on sale at the show: *Micro Text* and *Micro Base* (both reviewed in this issue), *Robbeary* (platform game) and *Maniax* (based on the classic arcade game *Qix*). *Maniax* on the C64 should also be available. **Stand 156**

Precision Software is presenting *Superbase Personal II*, the latest development to its range of Amiga database software (enhancements to its predecessor include built-in text editor and communications software). Precision is also launching three new Amiga products: *Superplan* (spreadsheet with *Superbase*-compatible data files), *Professional Animation Sequence Editor* (animates IFF-compatible picture files) and *Charon 5* (game mixing strategy and shoot'em-up). **Stand 34**

The UK Amiga User Group will provide visitors with technical help and advice and will be offering special show discounts to prospective members. **Stand 87**

Trilogic will be selling its new Amiga sound sampler to the public for the first time. The appropriately named *Amiga Audio Digitiser* is sold with the necessary lead to connect to musical equipment but doesn't come with any software. This deficiency can be forgiven bearing in mind the very competitive £24.99 price tag (with an extra £2.98 needed for A1000 users). Fortunately *AAD* is compatible with many existing commercial (and public-domain) music software such as Aegis *Audiomaster*, Eidersoft *Prosound* and Datel *Prosampler*. **Stand 157**

HB Marketing is presenting two new Amiga products, the much-acclaimed *ComicSetter* (novel DTP package) and *Design 3D* (CAD program). **Stand 57**

Sensible Software – a programming team making its show debut – will launch a new C64 soccer game published by Microprose. Also for sale ("at ludicrously cheap prices") will be Sensible's older C64 hits such as *Wizball, Parallax* (both published by Ocean) and *The Shoot'em-up Construction Kit* (published by Outlaw). The weird and wacky trio at Sensible (Chris Yates, John Hare and Martin Galway) will also be introducing a new feature to the show – very, very loud music – provided by a myriad of sound equipment. **Stand 120**

Arnor will be launching the Amiga version of its popular word-processor, *Protext*. "The PC version has been taking the market by storm" said Arnor's sales manager, Douglas Thompson, "the Amiga version has been under development for over two years now and we believe it to be the best Amiga word-processor available". **Stand 132**

SHOW FACTS

WHERE
The Novotel (Champagne Suite and Exhibition Centre), Hammersmith, London W6.

WHEN
Friday, November 18 – Sunday, November 20th, 10am-6pm (4pm Sun).

HOW MUCH
£5 adults, £3.50 under-16s.

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Amstrad PC1512 dual drive	499	639	N/A
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Amstrad PC1512 30Mb hard disk	699	799	N/A
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Amstrad PC1640 dual drive	550	699	810
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(New) Amstrad PC2086 DD 14" monitor	N/A	N/A	1050
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AMT 88/10 Mhz 30Mb hard disk	961	N/A	1225
Barbatan PC dual drive	605	770	920
Barbatan PC 20Mb hard disk	839	984	1134
Barbatan PC 40Mb hard disk	960	1110	1260
Commodore PC1 single drive	302	N/A	404
Commodore PC10 single drive	520	668	805
Commodore PC10 dual drive	649	799	949
Commodore PC20 20Mb hard disk	949	1099	1245
Hyundai Super 16 single drive	568	667	760
Hyundai Super 16 dual drive	670	774	852
Hyundai Super 16 30Mb hard disk	910	1009	1092
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Opus PC3 30Mb hard disk	979	N/A	1239
Opus PC4 20Mb hard disk	N/A	N/A	980
*Packard Bell VX88 single drive	540	600	850
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Barbatan 286/10 Mhz 40Mb hard disk	1415	1590	1780
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Commodore 286/10 Mhz single drive	1319	1410	1609
Commodore 286/10 Mhz 40Mb hard disk	2032	2166	2341
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*SBC AT 286/12 Mhz. As above with 40Mb hard disk	1866	2046	2166
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Walters AT 286/10 Mhz dual drive	1070	1260	1515
Walters AT 286/10 Mhz 20Mb hard disk	1393	1610	1869
Walters AT 286/10 Mhz 40Mb hard disk	1600	1807	2064

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	Mono Retail	CGA Retail	EGA Retail
Akhter 386/20 Mhz 40Mb hard disk	2846	3125	3275
(New) Amstrad PC2386 20 Mhz 65Mb hard disk 12" monitor	2599	N/A	2799
(New) Amstrad PC2386 20Mhz 65 Mb hard disk 14" monitor	N/A	2699	2899
AMT 386/32 Mhz 40Mb hard disk	3296	N/A	3596
Barbatan 386/20 Mhz 40Mb hard disk	2625	2840	2895
Barbatan 386/24 Mhz 40Mb hard disk	3049	3234	3375
Commodore 386/16 Mhz 40Mb hard disk	3529	3783	3999
Commodore 386/16 Mhz 80Mb hard disk	4499	4678	4953
*SBC 386/16 Mhz dual drive	2496	2796	2896
*SBC 386/16 Mhz 20Mb hard disk	2896	3100	3250
*SBC 386/16 Mhz 40Mb hard disk	2900	3000	3300
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Walters 386/16 Mhz 20Mb hard disk	2705	2882	3120
Walters 386/16 Mhz 40Mb hard disk	2861	2999	3250
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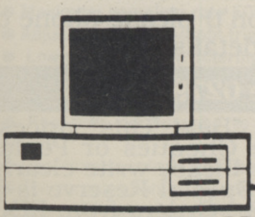

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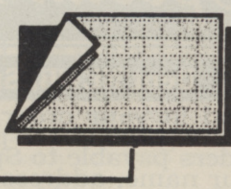

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Devpac 2

Assembler/Debugger System
Amiga ● £59.95dk
Also on ST ● £59.95dk
Hisoft ● The Old School, Greenfield, Bedford MK45 5DE. Tel: (0525) 718181

Amiga owners now have the chance to sample the new version of this assembler – already highly regarded by ST users – from the market leader in home computer assembly language packages.

Devpac2 is a 68000 assembly language development system for the Commodore Amiga which comprises macro-assembler, text editor, debugger, linker and operating system "include" files. The package consists of two disks containing the necessary programs and a 157-page manual.

User Interface

Devpac2 allows you to write, run and debug machine code programs. This process can basically be divided into four stages: source code editing, program assembling, program execution and program debugging. With its predecessor these stages were loaded into memory separately – wasting valuable development time – but now these tools are memory resident, saving time considerably.

Is it for you?

This is how we think different levels of user will react to the program.

● Beginner

Devpac2 **is not designed to be a tutorial to assembly language programming, so if you have no previous programming knowledge, learning 68000 language may prove too daunting a task – especially with the Amiga's audio-visual processors to cope with as well. Perhaps you should start by learning to program a high-level language such as Amiga Basic.**

● Intermediate

Devpac2 **provides the perfect upgrade to users of Amiga Basic, 'C' or other Amiga assemblers. In fact users of 'C' will be able to link and debug their old programs using *BLink* and *Monam* – thus enjoying the best of both worlds.**

● Advanced

Devpac2 **is the only real choice for the advanced assembler programmer and even includes a pocket guide to the 68000 instruction set for quick reference. All the include files are available, and the improved features of *Monam* really help at the crucial debugging stage.**

The editor, assembler and debugger are easily mastered, extremely efficient and support a wide range of options.

Features

What made the original version of *Devpac* so successful were its excellent text editor, fast macro assembler and useful range of debugging tools. These features have been improved in four main ways.

- Editor, assembler and debugger are now fully integrated.
- Uses ARP (AmigaDOS Replacement Project) File Requester.
- Maximum assembly time has doubled to 75,000 lines per minute (average time being 35,000 lines per minute).
- Numerous changes to the debugger such as improved user interface, multi-window display and stand-alone or assembler-resident operation.

HIGHLIGHTS

- ● Integrated full-screen text editor, macro assembler and multi-window debugger.
- ● Optional stand-alone version of the assembler.
- ● Memory resident assembly, program execution and debugging.

DRAWBACKS

- ● Manual lacks index and glossary.
- ● Single-drive users may find the include files take up too much disk space.

Documentation

The manual covers everything from making a backup of the disks to giving advice on the best Amiga technical books, and takes you through the package's features in a steady and easy to understand way. For advanced users there are various reference sections – presenting technical information in a clear and concise way.

Verdict

An almost essential purchase for the serious intermediate to advanced assembly language programmer.

✪✪✪✪✪

Replay 4

Atari ST ● £79.95dk
Microdeal ● Box 68, St Austell, Cornwall, PL25 4YB (0726 68020)

There seems no end to the list of sound samplers currently available for the ST. Nor, indeed, to the list of forthcoming samplers. While *Replay* isn't new, the *4* is. The *4* referring to the software version.

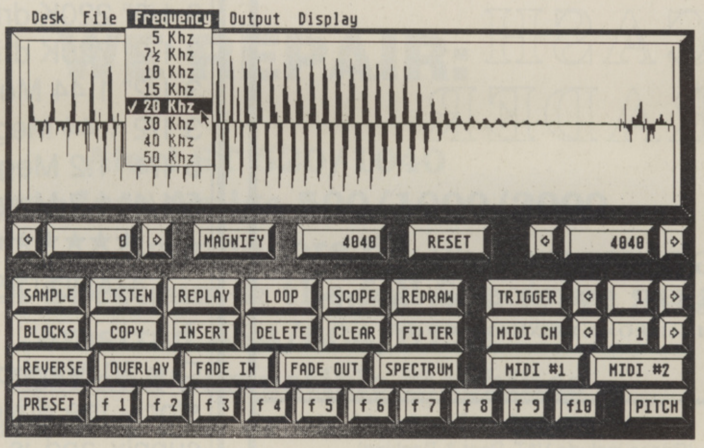
So what's improved?

The new package has a wide range of improvements: MIDI facilities allow up to 10 samples individually assigned to different MIDI keys, real-time pitch shift (bend) and much better effects (echo, reverb and so on) control.

The *Replay 4* package also includes the Drumbeat sample sequencing software. This lets you store 16 samples in memory and replay them three at a time (three-channel polyphonic). Up to 99 drum patterns can be stored in memory at once along with 70 song entries.

And are the major additions to the *Replay* digitising software:

- **● Maximum sampling rate 50kHz**
- **● Adjustable sample-input triggering**
- **● Low-pass software filtering (low frequencies pass unhindered while higher frequencies are chopped) on samples held in memory**
- **● Real-time oscilloscope to monitor incoming sound**
- **● Real-time spectrum analyser**
- **● Ten samples can be held in memory**
- **● Selectable waveform display**



Replay 4 grabs sounds from powered sources (that's amplified noises from CD, record, tape and so on) and converts what it hears to digital equivalents. Digital sounds are stored in the computer's memory as numbers. Because numbers are what the computer understands best, almost any operation can be performed on these values.

User interface

Functions are selected by clicking on pretty icons or by clicking on items in drop down menus. It's a vast improvement over the old version; much easier to use and more logical. The manual is almost unnecessary.

Range of features

Two phono sockets exist on the Replay board which slots into the ST's cartridge port. One socket for input, the other for output. Sampling rates are fixed – 5, 7.5, 10, 15, 20, 30, 40 and 50kHz. All frequencies, except the highest two, can be replayed through the computer's monitor. You'll need to hook Replay to an amp and speakers if you want to hear the highest playback frequencies.

Editing facilities include reverse, fade in/out, merge, filter, copy, cut and paste.

HIGHLIGHTS

- ● Sampling up to 50kHz
- ● Low-pass filtering possible
- ● Drumbeat and MIDI software a bonus
- ● Good provision for incorporating sounds into your own program

DRAWBACKS

- ● Manual could do with pictures to back-up text
- ● Sample rates are preset
- ● No audio monitoring facility

Documentation

Contents page, properly defined sections and even an index – a luxury indeed. Many hardware peripherals offer little more than a photocopied sheet. The only thing missing is pictures to accompany the explanatory text.

Verdict

There's excellent provision for programmers wishing to incorporate samples into their programs, with source files in assembler and examples in all major versions of BASIC.

A complete sampling and MIDI outfit rolled into one. Good value compared to similar offerings. The software works efficiently and only lacks compression and audio monitoring facilities.

✪✪✪✪

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APOLONIA SOFTWARE -THE COMPANY THAT CARES

WHY won't this (%x$! program run?!

Because it uses a graphics standard that's incompatible with your PC. There are more than SIX such standards, so it's no wonder PC users tear their hair out. To ease the pain PETER WORLOCK, himself still surprisingly hairy, gives you this complete guide.

The earliest personal computers, from the ZX81 onwards, used the easiest possible method of generating a screen display: a simple video chip driving a domestic TV set. For many years that set-up was sufficient.

However, as users demanded increased resolution, a greater range of colours and better image definition, display adaptors became more complex and the TV set became inadequate. Today's systems, typified by the Atari ST and Commodore Amiga, generate high-resolution, multi-colour graphics requiring dedicated video monitors to display the resulting images.

But from the user's point of view, even these systems are fairly simple to use: you simply buy the appropriate monitor for your machine. For users of IBM PCs and compatibles, however, things aren't that simple.

When IBM launched the PC in 1981, the basic system had no display adaptor at all, although two plug-in video cards were available as 'optional' extras: the Mono Display Adaptor (MDA), and the Color Graphics Adaptor (CGA). As the name suggests, the former displayed a monochrome picture, but it was also a text-only adaptor. The CGA was IBM's first attempt at meeting demand for graphics and colour.

However, these features were achieved only at the expense of text displays, and CGA is far from ideal for text-based applications. This led to a third attempt, the Enhanced Graphics Adaptor (EGA).

With the introduction of last year's PS/2 systems, IBM moved on. The low-level models in the range, the Models 25 and 30, use a system called the Multi-Color Graphics Array (MCGA), while the 'true' PS/2 machines use the new standard, the Video Graphics Array (VGA).

The MDA, CGA and EGA adaptors are all available as plug-in cards, and with genuine IBM PCs you must buy one before the system is usable. However, most clone manufacturers equip their machines with one or more adaptors as standard, and with the PS/2 machines IBM now builds the display adaptors into the basic hardware.

The picture is further complicated by display adaptors from third-party manufacturers. Many of these have dedicated applications in computer-aided design and desktop publishing, for example, but some, like the adaptors from Hercules, have become alternatives to IBM's standards.

The end-result of this confusion means good news, and bad, for PC owners. The good news is that, unlike Amiga owners, for example, you're not stuck with one graphics system. If you need more resolution, or more colours, you can simplybuy a more powerful plug-in-and-go adaptor.

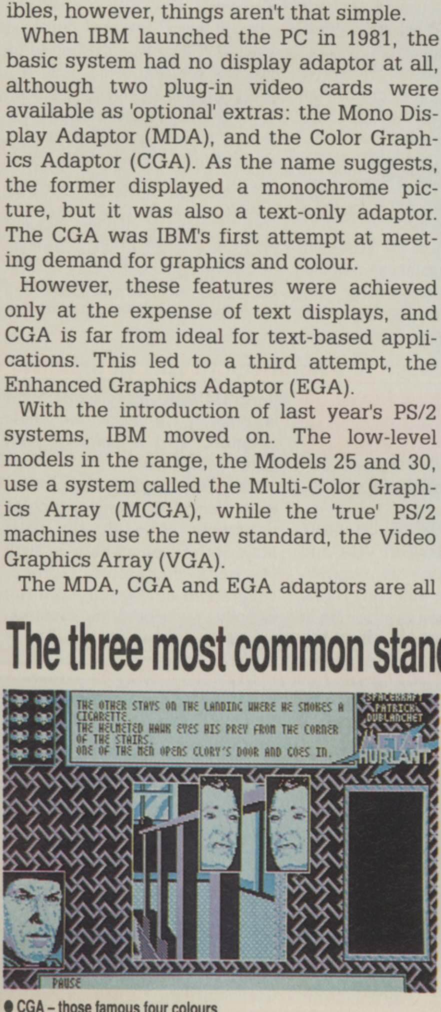
The bad news is that not all software is compatible with all adaptors, and that as the adaptors become more powerful, you need to buy more powerful, and more expensive, monitors.

☞

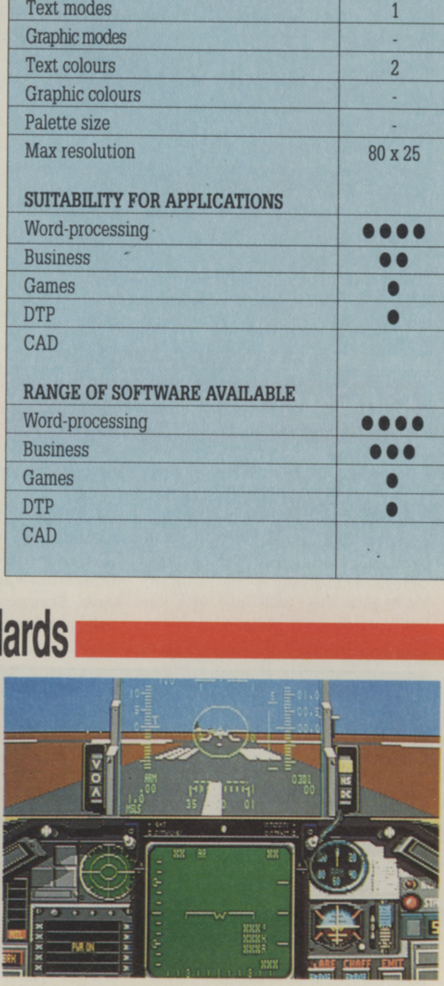
PC Display Standards: the breakdown

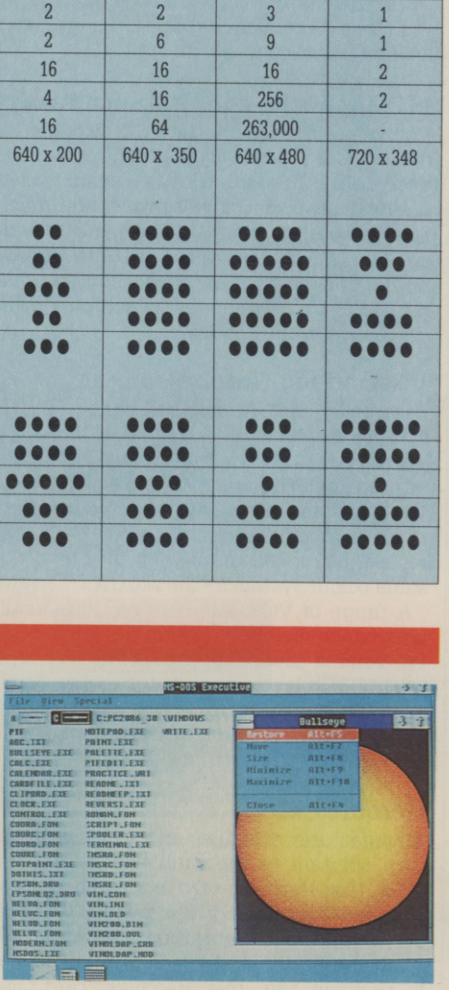
	MDA	CGA	EGA	VGA	Hercules
TECH SPECS					
Text modes	1	2	2	3	1
Graphic modes	-	2	6	9	1
Text colours	2	16	16	16	2
Graphic colours	-	4	16	256	2
Palette size	-	16	64	263,000	-
Max resolution	80 x 25	640 x 200	640 x 350	640 x 480	720 x 348
SUITABILITY FOR APPLICATIONS					
Word-processing	●●●●	●●	●●●●	●●●●	●●●●
Business	●●	●●	●●●●	●●●●●	●●●
Games	●	●●●	●●●●	●●●●●	●
DTP	●	●●	●●●●	●●●●●	●●●●
CAD		●●●	●●●●	●●●●●	●●●●
RANGE OF SOFTWARE AVAILABLE					
Word-processing	●●●●	●●●●	●●●●	●●●	●●●●●
Business	●●●	●●●●	●●●●	●●●	●●●●●
Games	●	●●●●●	●●●	●	●
DTP	●	●●●	●●●●	●●●●	●●●●●
CAD		●●●	●●●●	●●●●	●●●●●

The three most common standards


THE OTHER STAYS ON THE LANDING WHERE HE SMOKES A CIGARETTE.
THE HELMETED HAWK EYES HIS PREY FROM THE CORNER OF THE STAIRS.
ONE OF THE MEN OPENS CLORY'S DOOR AND GOES IN.

● CGA – those famous four colours


● EGA – that's more like it. 16 colours on-screen



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A    C    C:PC2086_30 \WINDOWS
PIF             NOTEPAD.EXE    WRITE.EXE
ABC.TXT         PAINT.EXE
BULLSEYE.EXE    PALETTE.EXE
CALC.EXE        PIFEDIT.EXE
CALENDAR.EXE    PRACTICE.WRI
CARDFILE.EXE    README.TXT
CLIPBRD.EXE     READMEEP.TXT
CLOCK.EXE       REVERSI.EXE
CONTROL.EXE     ROMAN.FON
COURA.FON       SCRIPT.FON
COURC.FON       SPOOLER.EXE
COURD.FON       TERMINAL.EXE
COURE.FON       TMSRA.FON
CUTPAINT.EXE    TMSRC.FON
DOTHIS.TXT      TMSRD.FON
EPSON.DRV       TMSRE.FON
EPSONLQ2.DRV    WIN.COM
HELVA.FON       WIN.INI
HELVC.FON       WIN.OLD
HELVD.FON       WIN200.BIN
HELVE.FON       WIN200.OVL
MODERN.FON      WINOLDAP.GRB
MSDOS.EXE       WINOLDAP.MOD
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● VGA – the ultimate colour graphics –some 300,000 pixels!

☞

MDA : Mono Display Adaptor

The MDA is the simplest display adaptor and so limited that it is virtually unavailable today. Producing 80 x 25 character text displays in two colours, it does provide highly readable text but no graphics.

CGA: Colour Graphics Adaptor

The CGA represents a minimal improvement. It's 80 x 25 text display can use 16 pre-set colours, but the smaller character matrix results in a loss of definition that makes text displays very tiring on the eyes over long periods. Definitely not recommended for word processing or spreadsheet work.

The CGA provides two graphics modes. A 640 x 200 display in black & white only, and a 320 x 200 mode with four colours. Unfortunately, colour selection is limited to a choice between two colour palettes: green/red/brown/one other, or white/light blue/purple/one other. In each case, the 'other' colour can be one of the 16 text-mode shades.

EGA: Enhanced Graphics Adaptor

With the EGA, IBM got it right. To start with, the EGA can emulate both MDA and CGA adaptors, so software written for those will run perfectly. But it also does things neither of its predecessors can do. Resolution is 640 x 350, and it can display 16 colours from a palette of 64, even in its highest-resolution graphics mode.

This means that text displays are highly readable, but quality graphic images can also be generated.

MCGA: Multi-col. Graphics Array

The adaptor used in the PS/2 Models 25 and 30 is a logical development of its predecessors. Resolution has again been stepped up, to 640 x 480 pixels, and much more powerful colour facilities are provided. The MCGA uses analog RGB to display up to 256 colours at once, from a total palette of 262,144 shades, which puts even the Amiga in the shadows.

VGA: Video Graphics Array

Essentially, MCGA is a sub-set of the VGA standard which in turn is a sort of 'enhanced EGA' so that many programs written for EGA will run unmodified on a VGA system. However, the VGA offers many extra modes, including 720 x 400 text modes, 640 x 480 graphics modes, and the same colour system as the MCGA.

A range of VGA adaptors are now available which means that even a humble £500 PC clone is capable of producing very high quality displays unrivalled by any other machine (with the exception of a £10,000 Macintosh II), provided it is equipped with the right monitor.

Hercules

Manufacturer Hercules came up with its own solution to the problems set by the MDA. The Hercules card is a mono adaptor capable of producing high-quality text displays and high resolution graphics. For many applications, the lack of colour is not a problem, so the Hercules card has become a popular alternative to IBM's own display adaptors. That popularity in turn has meant that many software publishers have supported the Hercules card, establishing it as a standard in its own right.

Further developments include the HGC+, which provides for customised fonts – quicker and more economical on RAM than graphics-generated fonts; the Hercules Color Card which is effectively a CGA card; and the Hercules InColor Card which is an EGA version of the mono card.

Others

Several third-party manufacturers offer graphics adaptors that exceed even VGA in screen resolution and available colours. For example, card maker Genoa has a SuperVGA card with resolution up to 1024 x 768 in 16 colours, and 800 x 600 in 256 colours.

Often, these super graphics cards have such unusual displays that manufacturers bundle them with special monitors. NEC, for example, has the MonoGraph system, featuring 1024 x 1024 graphics, bundled with a paper-white monitor specifically for desktop publishing applications.

The problem with these systems is software compatibility. Generally, the manufacturer will have to convince software publishers to include support for these odd graphics modes, and few publishers are willing. Therefore, you must check that the software you regularly use will be compatible with your would-be graphics system ●

How to get kitted out

When you buy a PC, you should make sure you get the display mode most suitable for your needs. Most manufacturers (Amstrad has been a key exception – see below) allow you to 'mix and match'.

For example, if you buy a low-cost PC clone you could ask your dealer to fit it either with a CGA card costing £50-100 (many such cards now also include Hercules and MDA thrown in), or with an EGA card (which may again include less powerful standards) for £80-150.

You could even opt for a VGA card at £200-250, although there is little point in putting such sophisticated graphics into a £500 PC – it would lack the processing power to run VGA at an acceptable speed.

If you are kitted out with more than one graphics standard, you can use MS-DOS to switch between them, although you will need to have a suitable monitor connected for the one you are running.

The monitor problem

The main price to be paid for the PC's graphics flexibility is the complication of finding the correct monitor.

At the simplest level, you can connect all display adaptors to a monochrome monitor. Although there is obviously no question of colour display, systems like the CGA, EGA and VGA cards will operate in mono mode, substituting up to 64 shades of grey for the usual colour shades.

Ascending the scale of graphics power also takes you up the price scale. The cheapest PC colour monitors are CGA-compatible systems – digital RGB monitors capable of displaying 16 colours. Although these monitors are colour-compatible with EGA, the higher vertical resolution of the EGA cards mean CGA monitors don't work.

Dedicated EGA monitors are also digital RGB, but have a higher scanning frequency to get the extra lines onto the screen.

The introduction of the VGA standard brought a matching development in monitor technology: the multisync monitor. These models have much higher frequencies capable of displaying the very high resolutions of the VGA modes, and are also analog RGB types, necessary for the large range of colours supported.

But if these monitors displayed only the VGA modes, they would be unusable with the earlier CGA and EGA adaptors. Therefore they need to be able to change scanning frequency according to the graphics mode in use. Unfortunately, these advanced features don't come cheap.

As a rule of thumb, monitor prices rise in £100 units: a mono monitor might cost £100, a CGA unit £200, an EGA unit £300, and upwards of £400 for a multisync model.

Software Compatibility

There is a broader issue of software compatibility with all video adaptors. Clearly, software written for a powerful adaptor will not work on a simpler system. More frustrating is the reverse, software that will not run on more powerful systems even in its original, graphically crude, form.

Although there is a large overlap, e.g. between VGA and EGA, in most respects adaptors differ from each other in crucial ways. Screen memory can be in different locations, so that any program that alters video RAM is unlikely to work on other adaptors. This is common with games software.

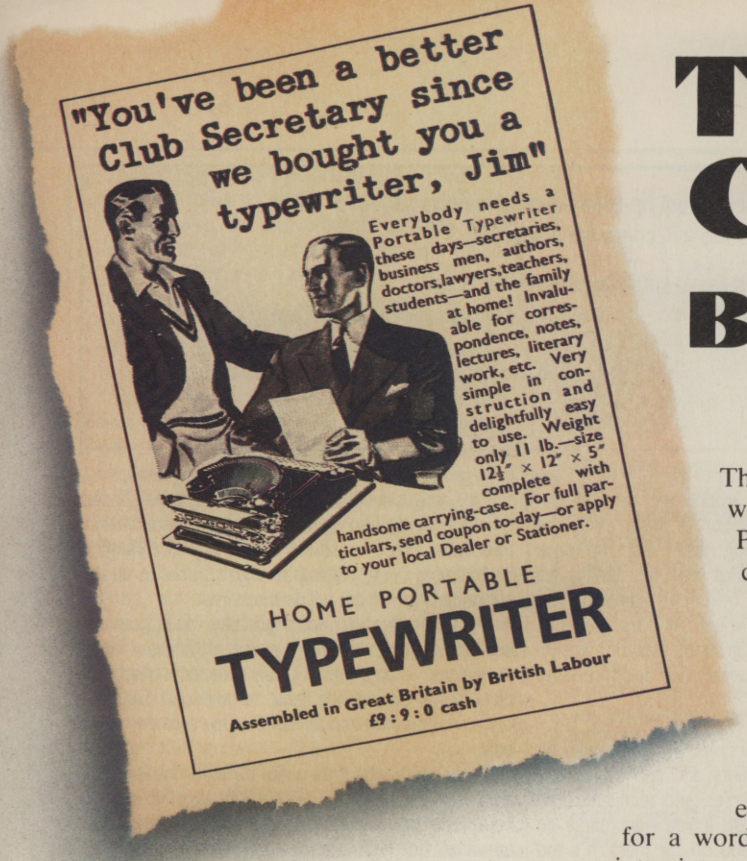
There are particular problems with Hercules mono graphics adaptors. Although the vast majority of applications – such as word processors, spreadsheets and databases – will run happily on Hercules systems, again few games will.

Where Amstrad got it wrong

Owners of the older Amstrad PCs (1512 and 1640) have a peculiar set of problems when it comes to graphics adaptors. At the root of many of these difficulties is Amstrad's decision to put the system power supply in the monitor – a practice it has thankfully stopped in its new PC2000 range. Although the PC1512 supports both mono and CGA displays, you can't simply swap your mono monitor for a CGA unit without also buying a standard PC power supply for your system unit.

Things are further complicated by the fact that Amstrad hard-wired the video circuitry to the main motherboard, which means that you're stuck with the graphics standards supplied with your machine. The only way 1512 owners, for example, can move up to EGA is to sell their entire system and buy an EGA-equipped PC.

Although Amstrad did provide its own 16-colour mode, ostensibly meeting some of the demand for EGA, it is completely non-standard and therefore precious little software takes advantage of it. Amstrad itself recognised the problem and no longer supports this 16-colour mode.



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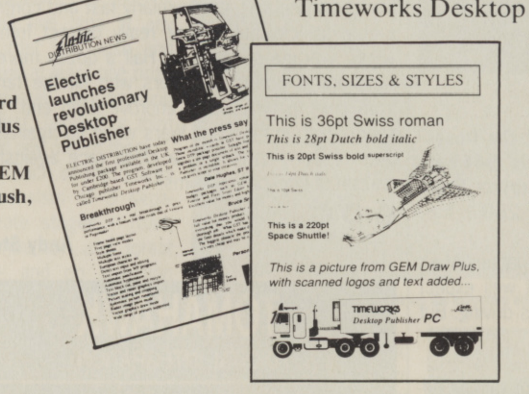

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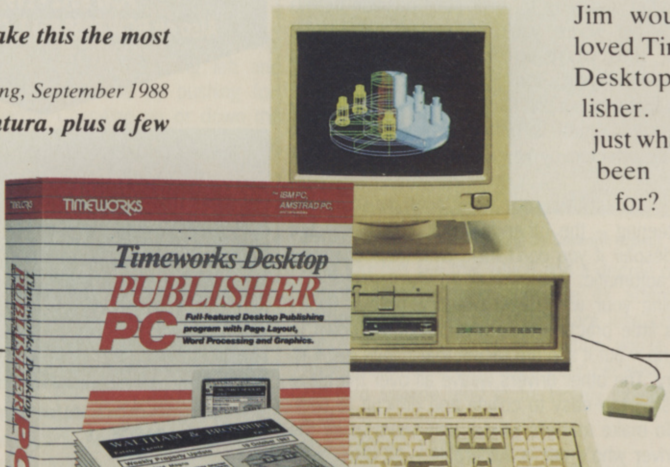
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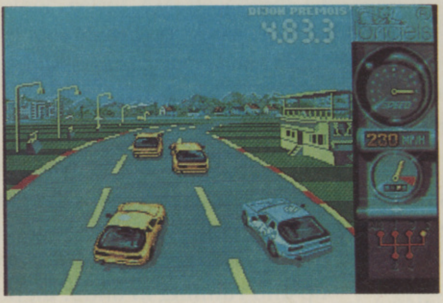

● It's turbo time as you push that Porsche on course

Coming firmly back to Earth after the hovering hi-jinks of *Space Racer*, Loriciels' *944* sets out to simulate top French racing driver Rene Metge's skills at the wheel of his 250 b.h.p. Porsche Turbo.

As Monsieur Metge is the man who rescued Mark Thatcher from the Sahara, you might well expect this game to feature plenty of brainless driving. But you'd be wrong.

● GAMEPLAY

You can choose between four circuits of varying difficulty after qualifying for your start position from a practice lap where you're the only car on the course. Then you're up there with the pros and pushing that joystick for all it's worth to steer your way to first place within the two laps that constitute each race. Control is pretty responsive and can either be effected by keyboard or one or two joysticks.

Two joysticks ? Yes, one for acceleration, braking and steering – the other for gear changes – but don't despair if you don't have two, gear changing will be automatic.

Gunning your way round practice laps is fine – after a little practice the Porsche settles down to your grip – but it's in the racing that things get a little hairy. The other drivers weave all over the place and it's all too easy to collide and difficult to overtake. To make matters worse, you seem to be the only driver who's car is vulnerable – all other vehicles career on without a dint in sight! Take a bend too fast and you spin out of control, hit one of the immortals and you lose valuable time while your car miraculously regenerates trackside.

● GRAPHICS AND SOUND

944 comes on two discs, the first containing a load up screen and some of the best digitised music you're likely to hear on an ST – *Captain Blood*'s intro included. Then it's down to the purring of the Porsche as you punish it around the scrolling circuits. Your view of the action is from over and behind the car you're driving rather than the more usual cockpit viewpoint. But despite feeling as though you're manning a helicopter camera, you soon get the feel of the wheel. All cars are solid chunky sprites set on backgrounds featuring grandstands, signs and arrows beside two and three-lane roads.

● OTHER VERSIONS

The ST, Amiga and PC versions will come with an optional model Porsche, hints and tips from Rene Metge on each of the courses and tech-specs on the Porsche for an extra £4. If you want these on the 8-bits you'll have to send off for them. It's too early to say what the other versions will be like yet but it's a fair bet that the Amiga one will take pole position by employing stereo FX.

● EXPRESS VERDICT

Frame update ain't spectacularly fast and control is a little finnicky but neither really detract from an above average speedo-sim. Half a dozen more circuits and a bunch of drivers who hit the tarmac from time to time would improve it no end. *944* scores high in the Road Wars when up against the likes of *Out Run* but it's a close race against the realism of cockpit-view sims.

✪ ✪ ✪

Andy Storer

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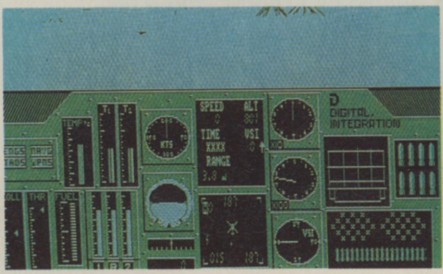

● Detailed instrument panel and fast-moving 3D graphics make this a graphic treat on the PCW

***Tomahawk* is rather long in the tooth for review now, but for the fact that the PCW version is now 9512 compatible.**

● VERSION UPDATE

The PCW version of *Tomahawk* is reckoned by many to be the best of those available, and although it's now a couple of years old, it's still an excellent game – particularly on a machine where new games releases are few and far between.

The game is a helicopter combat/flight sim based on the U.S. Army AH-64 Apache Advanced Attack Helicopter. Four missions are available, ranging from simple flying training through combat to strategic domination of the whole map area.

In addition to this, four difficulty levels can be selected, not to mention a range of different flying conditions – day/night, clear/overcast, height of cloudbase, crosswinds and turbulence. The last option is recommended for the experienced pilot only.

Tomahawk is about as accurate a helicopter simulation as the hardware permits, so don't expect to be able to sit down and fly your Apache like a veteran within the first five minutes – or five days, for that matter.

Those four missions give you a great deal to do, and with the various difficulty levels and flying conditions available it'll take a long, long time to burn this game out. Unless you've got absolutely no patience with instruction books, the message for PCW owners is simple. Buy it.

✪ ✪ ✪ ✪

Rod Lawton

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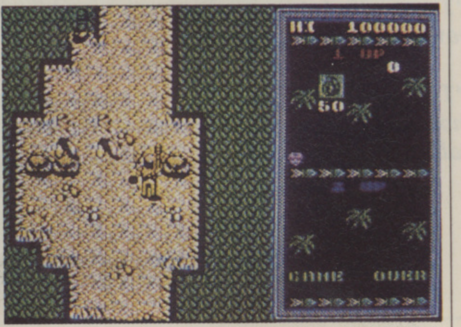


● Indifferent graphics on the Spectrum version – can you spot the bad guys?

Imagine's latest offering is a conversion of the Shin Nihon Kikaku Corp. (SNK) arcade coin-op *Guerrilla War*, which is a multi-level, vertically scrolling shoot'em-up in the *Commando/Ikari Warriors* mould.

● GAMEPLAY

You take the role of a marine assigned to rescue some helpless inhabitants of a tropical island taken hostage by an evil dictator (and his minions) known only as The Tyrant.

Armed only with a machine gun and grenades, it's your duty to kill on sight any enemy forces that try to stop you. On your mission through swamps, rivers, and ruined towns you'll not only encounter 'grunts' (foot soldiers to me or you) but also tanks, emplacements and devious traps. Fortunately, armament improvements can be found along the way, such as bazookas, flamethrowers and the ultimate toy – your very own tank.

Each of the five levels contains a different style of enemy attack pattern and end-of-level guardian – who is tougher than your average mercenary, requiring approximately 32 shots to kill.

At the end of the fifth level, you'll fight The Tyrant within the splendour of his grand palace.

● GRAPHICS AND SOUND

The individual sprite and background definitions are good, but are let down by their merging together during play – making it hard to see your marine in the heat of the action. The vertical scrolling is competent rather than exceptional.

Guerrilla War is accompanied by a funky little soundtrack on the title screen with functional sound-effects during play.

● OTHER VERSIONS

The C64 and CPC versions should be available as you read this, with the ST and Amiga versions following shortly afterwards. No other details are currently available.

● EXPRESS VERDICT

Guerrilla War replicates its arcade parent quite closely in the audio-visual departments, but despite the simultaneous two-player option, it fails to produce a really playable game due to the sprite-background merging factor.

Guerrilla War is one for fans of the arcade game or *Commando* genre only, and is definitely one to try before you buy.

✪✪✪

Rik Haynes

CRYSTAL HAMMER

AXXIOM

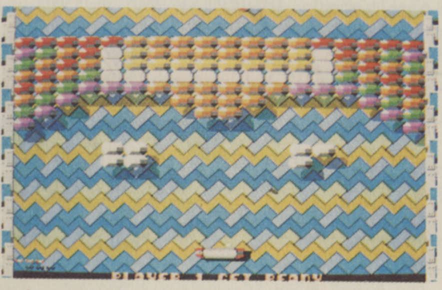
Amiga • £14.99dk
No other versions planned

The first of nine 16-bit games to be released by this German company via a tie-up with Microprose, *Crystal Hammer* is a *Breakout* clone high on style.

How does it match up to its definitive predecessor – *Arkanoid*? – or for that matter *Crack*, *Impact*, *Tonic Tile* and *Giganoid*?

● GAMEPLAY

Bat and ball screen games have been around for so long there shouldn't be anyone out there who doesn't know what you have to do. *Crystal Hammer* fea-



● Crystal Hammer's stunning backdrops and fast animation push screen updates to the maximum

LOMBARD/RAC RALLY

MANDARIN

ST • £24.95dk
Due out soon on Amiga, PC

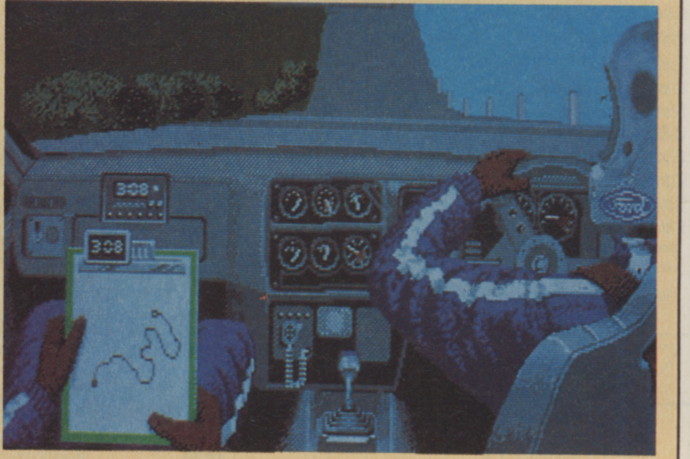
Over the years there have been umpteen car-racing games released onto a market that's not too choosy about the level of simulation involved.

FEATURE PACKED!

Recent outings along the lines of *Roadblasters*, *Overlander* and *Fire and Forget* have added blast-em-up features to the endless circuit driving. Release a variation that combines depth, skill and strategy and you're onto a winner. Aren't you?

● GAMEPLAY

The full Lombard RAC Rally has you driving your 300bhp Sierra Cosworth against the clock around all 15 stages of the 5 legs comprising the event. But you must first prove your competence by playing all five legs in any order you wish and win at least one prize overall by finishing first, second or third in any one of them.



● Up into third for the long haul along the mountain edge

Each of the 5 legs consists of 3 separate stages – road, mountain and forest – and on selection you are given displays of the route map, the route type and conditions (daylight, night and fog), the prescribed times, the prize money for achieving those times and the competition you're up against.

Driving the Cosworth with a joystick is pretty straightforward; you steer by pushing left and right and accelerate or brake by pushing forwards or backwards. Changing up or down the gears is achieved by clicking on fire while moving the stick forward or back.

Effective gear-changing is the key to *Lombard* – the twists and turns, hills and valleys, and variable visibility all combine to require some fast reflex action. It's all too easy to miss a bend or misjudge your braking and thereby leave the road surface or hit a passing tree – varying damage to your car will result and you'll lose valuable time. This means you'll need to keep an eye on the state of your engine, bodywork, suspension and tyres because sooner or later you'll have to enter the workshop for repairs. And, of course, repairs cost money.

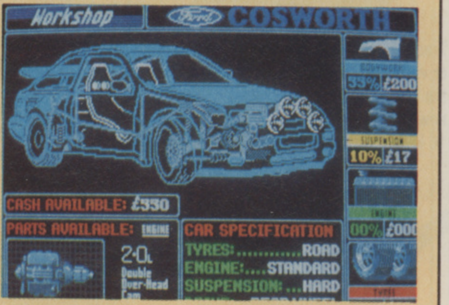
If you don't have much luck finishing anywhere, let alone in the first three, you can opt to 'appear' in a TV interview where correctly answering a series of questions will top up your cash balance.

● GRAPHICS AND SOUND

Getting to grips with the Cosworth's handling characteristics is made more difficult by the size of the windowed view of the road ahead. Only the top third of the screen is devoted to the route at hand – the remainder comprising a view of the cockpit interior replete with convincingly animated steering wheel, dials and gear changes.

The view ahead, whilst scrolling smoothly enough, could perhaps have been a little larger but then this does have the effect of speeding up the action considerably and compounding the sense of urgency when you're battling for a winning time.

Each of the three terrains is well-depicted – the mountain sequences being especially worthy of note. A nice inclusion is in those stages where you're driving through fog – the distance you can see ahead is entirely dependent on the state of repair of your headlights. It's neat touches like that which add a degree of realism to *Lombard* and underline its attempt at authenticity. But sound effects are less convincing – it's not easy to hear when you're over-revving and need to change gear because different rpm sounds tend to be largely indistinguishable.



CASH AVAILABLE: £330
PARTS AVAILABLE: ENGINE
CAR SPECIFICATION
TYRES:............ROAD
ENGINE:....STANDARD
SUSPENSION:...HARD

● In the workshop and time to kit out the Cosworth (again!)

● EXPRESS VERDICT

Lombard/RAC Rally is a great attempt to convey the peaks and pitfalls of the world of rallying. If you're tired of the same old tracks and bored with highway hi-jinks, then this one's well worth a look. The variety of gameplay and attention to detail should ensure its success.

✪✪✪✪

Andy Storer

TIME TO TALK

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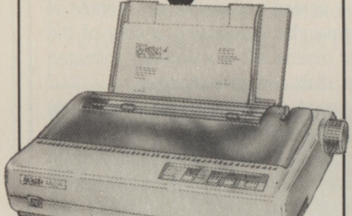

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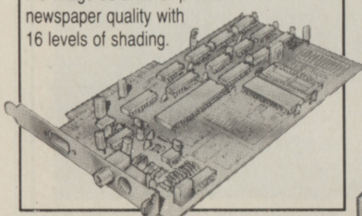

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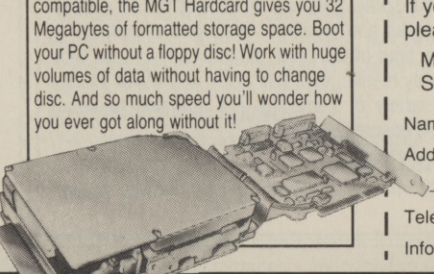

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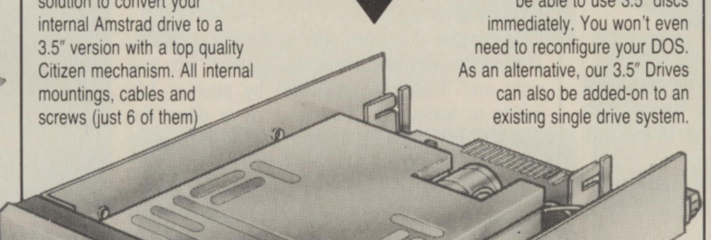

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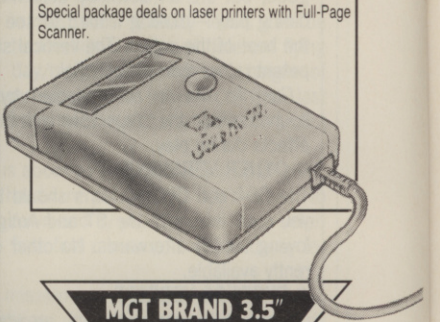

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tures 30 levels of blocks which need to be destroyed and 8 types of invading obstacles designed to make that objective a great deal more difficult. There are all the usual 'feature-capsules' you must catch – giving you lasers, triple balls, extra lives and so on. Where *Crystal Hammer* differs slightly is that some of these capsules automatically switch you to the next level while others destroy you.

● GRAPHICS AND SOUND

Dense block arrays on super-solid backgrounds make *Crystal Hammer* an enjoyable visual feast. Whilst the animation of the ball is both ultra-smooth and, at times, incredibly fast, that of the moving obstacles has an intended flicker which unfortunately veers towards epileptic frequencies. Spot sound effects only add atmosphere to visuals of this quality and serve to rescue you from complete and utter mesmerisation.

● EXPRESS VERDICT

If *Breakout* clones are your scene and as *Arkanoid – Revenge of Doh* has yet to appear on the Amiga, *Crystal Hammer* may well be worth a look. Of course you may have already purchased *Giganoid* in which case you probably won't bother. But if the difference between 15 and 20 quid is a big one for you then *Crystal Hammer*'s the one. Don't forget the Optrex!

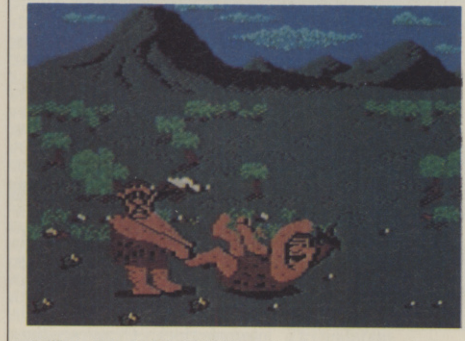
✪ ✪ ✪

Andy Storer

CAVEMAN UGH-LYMPICS

ELECTRONIC ARTS

C64 • £14.95dk
No other versions planned



● What will the Anti-Sexist Software Committee say about the Mate Toss event?

***Caveman Ugh-Lympics* takes the familiar joystick-waggling sports-sim genre and places it in a new scenario – prehistoric times.**

● GAMEPLAY

After choosing your caveman from a selection of six athletes – each with their own strengths and weaknesses – it's time to compete in each of the awaiting events: Mate Toss, Clubbing, Dino Vault, Dinosaur Race, Firemaking and Sabretooth Tiger Race.

● GRAPHICS AND SOUND

Ugh contains a wide variety of cartoon-style sprite designs. Unfortunately, their definition is blocky, with very few frames of animation. The backdrops are simple but effective.

Soundtracks and sound effects are very rudimentary – with some soundtracks being intentionally awful.

● OTHER VERSIONS

Ugh is only available on C64 disk at present, but a C64 cassette version is currently under consideration. No other versions are planned.

● EXPRESS VERDICT

Ugh is a novel twist on the old sports-sim theme, using a very original and humorous approach. Short-term appeal is assured but long-term interest is doubtful. *Ugh* is probably a game for younger gamesters only.

✪ ✪ ✪

Rik Haynes

THE MARS SAGA

US GOLD

C64 • £14.95dk
No other versions planned

Compared to the exotic locations of most fantasy role-playing games, *The Mars Saga* takes place almost on our own back doorstep.

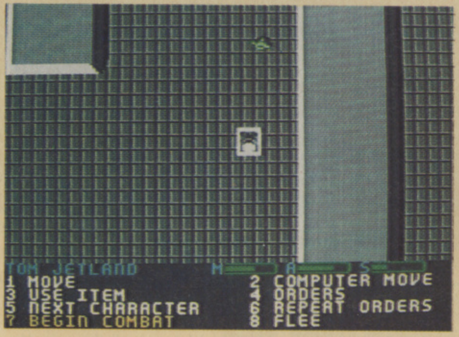
Your task, as adventurer Tom Jetland, is to learn what fate has befallen one of Mars' four cities, Proscenium, the farthest outpost on the newly-colonised red planet.

● GAMEPLAY

You start your adventure in the Martian city of Primus, basically penniless, friendless and clueless. You will gain experience points only from your travels and encounters with other residents – not the easiest of things, bearing in mind Mars has been colonised by convicts brought in to work in the Martian mines. It's difficult to travel far in the city without being accosted by muggers or hoodlums.

EPIC TASK!

The first phase of the game is largely exploration, as you move about the city. Your position is shown in a window in the top right of the screen, on a map made of a grid of squares. These are all blank to start with, but as you move through the city they disappear two blocks ahead of where you're 'looking' to show the layout of buildings and streets.



● The combat screen – not that you'll get to nick much from a beggar!

Top left is a window showing the view as seen through Tom Jetland's eyes. Below these two windows are the readouts for Tom's Might, Agility, Stamina and Health (as you recruit followers, their attributes are displayed too). At the bottom of the screen is a command box.

There is actually quite a range of buildings, including bars, armories, hospitals, combat training centres and many more. If you sustain injuries during combat it's not a bad idea to trot along to the hospital to get yourself fixed up, while a visit to an armoury could see you better prepared next time...

Combat is almost a sub-game in itself, and can be handled either automatically by the computer or manually. The map screen is replaced by a blow-up of the combat area, and both you and your assailant are represented on-screen by small, viewed-from-above animated characters.

To recruit followers to assist you in your quest you'll need to frequent the many local bars and eye up the customers. All mining operations have just been suspended (rather conveniently), so there are plenty of prospective allies kicking their heels at the moment. Once you've assembled your party and you're moving through the city, you can readily swap items from one to the other, and change the leader according to the hazards you face.

A code wheel is supplied with the packaging, and you'll need this once you're ready to leave the city to get the correct access code. A subtle form of copy protection perhaps?

● GRAPHICS AND SOUND

Given the nature of the gameplay, the graphics aren't the game's most important feature, and they are more than adequate for the job. The map window is rather basic (but that's all it needs to be anyway), while the action window is interesting only when there's something happening. The combat screen is possibly the most interesting visually, though in the early stages you'll probably be just watching the computer do work. Sound is good too, with a pleasant – if odd – musical accompaniment.

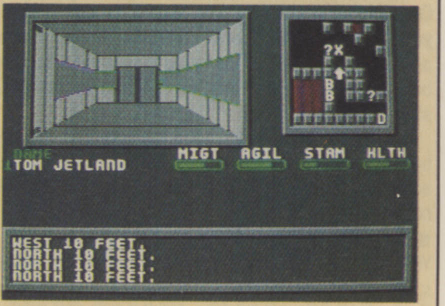
● EXPRESS VERDICT

There's only space here to give a glimpse of what the game's about. In fact Saga is the right name for it. There's so much to do and explore, with so many options to investigate it'll keep you going for a long, long time. The control method is simple and effective, without some of the horribly repetitive command sequences that mar other role-playing efforts.

All in all, it's a good 'un.

✪ ✪ ✪ ✪

Rod Lawton



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WEST 10 FEET.
NORTH 10 FEET:
NORTH 10 FEET:
NORTH 10 FEET.
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● Your view as you plod the streets of Primus

RETURN OF THE JEDI

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ST • £19.95dk
Also on Spectrum, C64, CPC, Amiga

A long time ago, in a galaxy far, far away....well 1988 UK, actually – yes, that's right, The Force is with us again thanks to the guys at Domark.

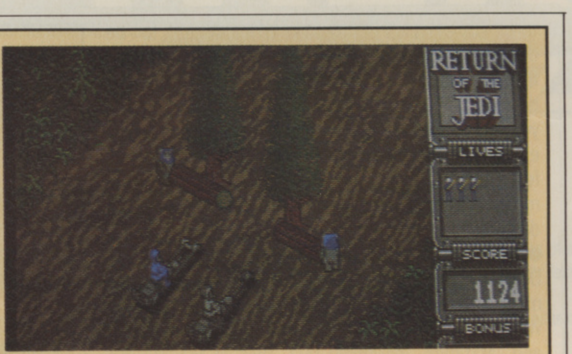
Return of the Jedi is the third in a trilogy of home computer conversions – of the arcade games – of the movies – of the books – of the ideas – of George Lucas's *Star Wars* saga.

● **GAMEPLAY**

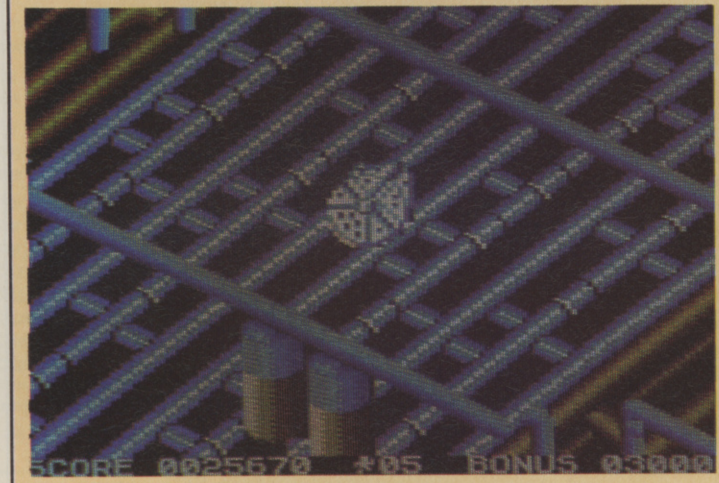
Jedi is different to its predecessor in that it's not a vector-graphic game – images are in a psuedo-3D, diagonal-scrolling shoot'em-up style in a similar vein to the old classic *Zaxxon*.

During the different stages of the game you control the various Rebel characters in an attempt to destroy the evil Emperor and his Imperial Deathstar.

CLASSY CONVERSION!



● ST: Leia and Imperial Stormtrooper sorting the wood from the trees



● Amstrad: Lando flies the Millenium Falcon in to attack the Deathstar's reactor

First it's Leia on her Speederbike, battling it out against Imperial Speeders and natural hazards on the forest moon of Endor.

Next the action splits between Chewbacca in an Imperial Scout Walker attacking the bunker protecting the DeathStar's shield and Lando Calrissian in the Millennium Falcon in a fight in space against Imperial Tie Fighters and Star Destroyers.

The final stage consists of Lando travelling through the inner workings of the DeathStar until he reaches the reactor – blasting it – and then doing a runner before the whole DeathStar blows.

● **GRAPHICS AND SOUND**

Jedi's visuals bear a very close resemblance to their arcade parent, with very smooth animation and scrolling throughout.

Audio consists of adequate sound effects with snatches of the many *Star Wars* tunes. Also included are digitised speech extracts from the movie, which can only be recommended by virtue of quantity rather than quality.

● **OTHER VERSIONS**

The Amiga and 8-bit versions of *Jedi* should be available as you read this.

● **EXPRESS VERDICT**

Jedi is a playable and easy to get into game, with only lasting interest doubtful – so check-it out, and 'May the force be with you'.

✪✪✪✪

Rik Haynes

TRIVIAL PURSUIT: A NEW BEGINNING

DOMARK

Amiga • £19.95dk
Also on Spec, C64, CPC, ST

Get this – it's 2045, the Earth is dying and you, your family and friends have been assigned the task of carrying civilisation to the only known planet fit for human habitation outside the solar system – Genus 2.

However, it has been agreed that only those who have a superior knowledge of 'Genus Trivia' will be admitted. Sound a little convoluted? You ain't heard nothing yet!

● **GAMEPLAY**

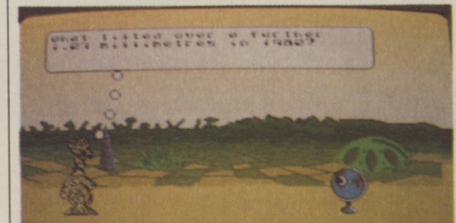
You and the other players are depicted by small robots who blast off through a starfield on your way across six galaxies to join the Mensa clones on Genus 2. Each galaxy has a bunch of planets which you can select to 'land' on and have a question asked of you on a range of subjects.

It's largely a hit-and-miss affair as to what type of question you'll be asked there, but there are supposed to be clues lurking in the planetary names to signify the subject.

Once you've selected your planet, you are greeted by a bizarre alien who produces a 'question bubble' out of thin air. You then answer out loud and click the mouse, whereupon the correct answer is displayed on screen and you're asked to confirm whether you answered correctly or not – you'll have to rely on either your playmates or your conscience to rule out cheating here. If you're wrong, play passes to the next player, if you're right, you go on to the next planet in that sytem.

Some planets contain objects such as scrolls and microscopes which you can collect if you answer the posed question correctly, whereupon you're miraculously transported to another galaxy. And the next series of questioning begins. Find all six objects and you're off to Genus 2 where you're greeted by six white-haired dwarfs with beards who represent different subject questions.

AARRGGH!
SILLY SCENARIO



● Pisa will have fallen over before this gets to No. 1

To win the game you have to answer all six questions correctly, one after another. It's no good just getting 5 right – next time it's your turn you'll have to tackle all 6 again.

● **GRAPHICS AND SOUND**

Graphics are for the most part quite laughable – but then for *Trivial Pursuits* you'd hardly expect state of the art solid 3D multi-plane scrolling would you? What's there probably doesn't tax the Amiga anymore than updating it's internal clock. Okay, so the effect the authors are after is cartoon strip – and in terms of humour that's what they've achieved.

Some of the questions are accompanied by short musical bursts sounding as though an orchestra's been recorded down the phone whilst others come with primitive graphic representations even members of Densa could have drawn.

● **OTHER VERSIONS**

Available also on the ST, Spectrum, C64, and CPC, *A New Beginning* is probably better suited to the 8-bits where it's low-rent appearance won't be so apparent as on the most powerful of the bunch.

● **EXPRESS VERDICT**

Not really worth buying unless (a) you're a terminal trivia addict; (b) you're under ten; (c) you want a good laugh; (d) a combination of all three. We just can't wait for the next installment – *Escape from Genus 2*?

✪✪

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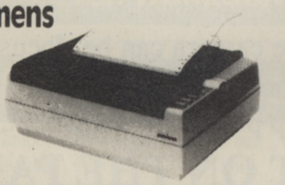

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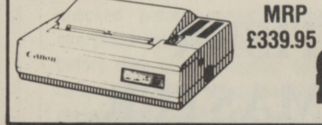

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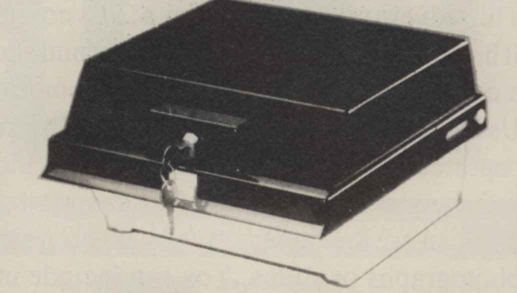

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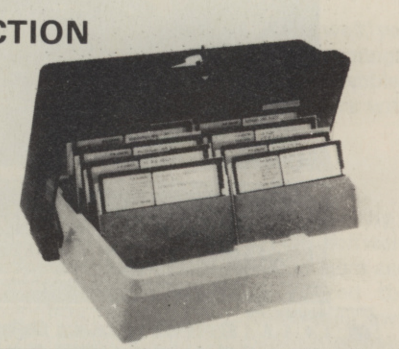

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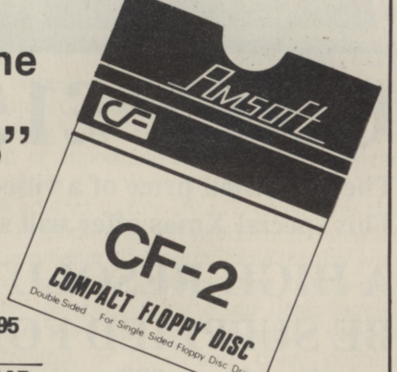
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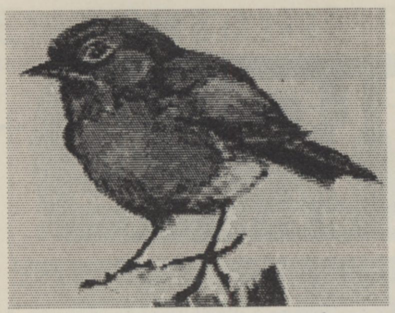

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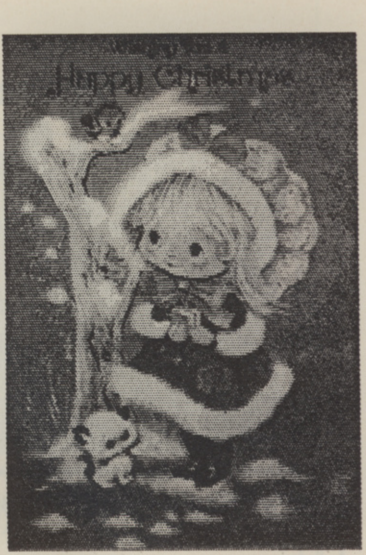

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It's back!

PETER WORLOCK documents the rebirth of a much-maligned programming language

True or false?

- 8K is plenty of RAM.
- 16 colours are all you'll need.
- Tape cassettes are an adequate form of storage.
- Basic is the computer language of choice.

Five years ago all four statements would have been generally accepted as true. Today, most users consider them hopelessly false. Amiga and ST owners are beginning to recognise that even 1 megabyte of RAM is barely sufficient, a 'good' colour range runs into hundreds of shades, and cassettes are out except for games.

But if you think Basic is dead as well, you are wrong. Despite the long and seemingly inexorable rise of rivals such as assembler, Pascal, C and Modula-2, Basic is back with a bang.

The fall...

The drift away from Basic was driven by a number of factors. First, as the software industry developed, the arrival of more and more commercial products reduced the need for computer owners to do their own programming. Second, it became obvious that Basic programs could not match the speed and quality of those commercial packages.

Third, as the hardware developed, Basic got rather left behind – a problem typified by the Commodore 64 which provided excellent sound and graphics that were difficult or impossible to control through the machine's primitive and clumsy Basic.

An adjunct to this latter problem was the rise in popularity of windowing software environments offering multiple display windows, pull-down menus, and mouse-controlled pointers. Once again Basic lagged behind the times and offered no way of controlling, or replicating, these popular features.

...and the rise

However, recent developments have either overcome these problems, or rendered them less important. The first significant change was the move to what might be called 'soft systems'. These machines can be contrasted with hard systems like the Spectrum, BBC Micro and Commodore 64 in which the operating system and Basic lan-

☞

Compiler vs Interpreter

Computer languages come in two flavours, interpreted and compiled, and each represents a trade-off between two factors: ease-of-use and speed.

Interpreters are easy to use. When you run a program, the interpreter scans each line, makes sure the syntax is correct, translates it into machine code, then executes the instructions.

Because every instruction is checked before operation, the interpreter can spot any errors before they occur, stopping execution and giving an appropriate message pin-pointing the area of the mistake.

You can then correct the error, usually quickly and easily, before re-executing the program.

The drawback to this friendly way of working is the lack of speed. Obviously, the interpreter has a lot of work to do, and cannot do it very quickly.

Compilers overcome this speed limitation by translating the instructions into machine code only once, thereby allowing your programs to run much, much faster than comparable interpreted programs.

However, although compilers can spot obvious errors in your code – things like mis-spelled instructions, and missing data – they can't spot the more subtle 'logic' errors that only occur when the program is running.

This means that the actual writing of a program for a compiled language can take much longer. You cycle repetitively through the stages of coding, compiling, running, error-checking, re-coding, etc. In a sense, this is the real difference between the two methods: compiled programs are slow to write but quick to execute, while it's vice versa for interpreted code.

The picture is complicated by two further considerations. Recent compiled Basics, like *Turbo Basic* and *QuickBasic* on the PC, and *HiSoft Basic* on the ST, compile so quickly that for many programs they are as interactive as interpreters.

Secondly, some compilers will handle the code produced by your 'standard' interpreter, so you can enjoy the ease-of-use of an interpreter in writing your program, and once the code has been completely de-bugged, you can then compile it, thus enjoying the best of both worlds.

Why ST owners must upgrade

Atari ST owners are almost spoiled for choice when it comes to versions of Basic – and with good reason, because Atari's own *ST Basic* was a dog. Sadly lacking in commands that controlled the power of the machine, and bug-ridden into the bargain, the best thing to be said for *ST Basic* was its price – it was free.

Atari has remedied some of the shortcomings of the original, but rival versions have now established themselves as near-standard products and *ST Basic* remains the poorest current option for the would-be Basic programmer.

The first alternative was Computer Concepts' **Fast Basic** which rapidly assumed the status of a de facto standard among ST owners. It was fast, as the name implied, but better still was the fact that it provided full control of the GEM operating system, including windows, menus and the mouse.

It was supplied on plug-in cartridge which proved to be both a strength and a weakness: in its favour, the cartridge format meant there was no waiting while the interpreter loaded from disk, and it also freed up more memory for the user's own programs. Against that was the fact that you couldn't give friends a copy of your programs unless they also had the *Fast Basic* cartridge.

The next Basic on the ST scene was Glentop's **GFA Basic**. This was also an interpreter but ran at blazing speed, particularly in graphics programs. The icing on the cake was the release of the GFA compiler which speeded things even further, but more importantly allowed the production of stand-alone code so you could give (or sell) copies of your programs to any ST owner.

Naturally, *GFA Basic* was not flawless, but Glentop has upgraded the product (version 3 is due very soon) and the availability of *GFA* tutorials, books and add-on modules such as a vector graphics package, have turned *GFA Basic* into an outstanding language. At least one commercial product – Microdeal's *Slaygon* – was written in GFA Basic.

Third up was HiSoft with two products. **HiSoft Basic** is a full-blown compiler compatible with Microsoft's *QuickBasic* on the PC. It's fast and flexible and offers a number of interesting features such as machine-code libraries for graphics etc. One of its most exciting features is the ability to produce ST desktop accessories.

HiSoft's **Power Basic** is essentially a cut-down version lacking the libraries and a few other features, but also about half the price of its big brother.

☞ guage were built into the machine, hardwired on the main circuit boards.

Often the OS and Basic were integrated which made them almost impossible to alter, and while better Basics could be loaded into memory they cut down the amount of usable RAM to unworkable proportions.

By contrast, soft systems like the PC and the Amiga are essentially empty boxes. The operating systems are loaded from disk, as are all programming languages including Basic. The ST is half a soft system – the GEM operating system is hard-wired, but Basic is an external program.

> ***"The new versions of Basic have been stripped down, re-designed and re-built to be faster and more flexible."***

Two of the best on the PC

As in so many software areas, the PC has the widest choice of alternative Basics, but more importantly it has the best from two of the leading names in software: Microsoft and Borland.

There's little to choose between the two. **Microsoft** may not have invented Basic, but it more or less established the standard. Microsoft Basics have appeared on every PC and clone ever produced. The excellent Basic for the Macintosh is a Microsoft Basic, as is the Amiga's top-notch version. Meanwhile, Borland's **Turbo Basic** has been called the best version of Basic ever produced.

Both provide a multiple-windowing editor for program writing, the compilers are very fast in action – so much so that for many programs they have all the interactive feel of an interpreter – and the programs you write with them will run very quickly too. In this latter department *Turbo Basic* has a slight edge, so if speed is crucial that might be the deciding factor.

Advanced features include true recursion, and interrupt-driven functions. Both products allow you to integrate machine code routines quite easily (although not ideally). Both *QuickBasic* and *Turbo Basic* sell for £60 (a bargain by PC software standards) and your only problem is likely to be choosing between them.

Although the manufacturers of these machines include a version of Basic, you are no longer limited to just that implementation. If you want a better Basic, you can load it from disk and it sits in the machine instead of, rather than together with, the supplied version.

This is particularly important on the PC and ST where the supplied Basics are very limited, old-fashioned implementations of the language. Amiga owners are more fortunate in getting a top-class product.

The second force for improvement was the arrival of the new machines themselves. The PCs, Amigas and STs are faster, more powerful computers offering many more features in hardware than their older 8-bit counterparts. It is therefore easier to write professional-looking software without the need to resort to assembler. Of course, these Basic programs cannot be as powerful or as fast as similar products written in C or assembler, but can still be perfectly adequate.

Last, but not least, are the new versions of Basic, still the same old language, but stripped down, re-designed and re-built to be faster and more flexible. And in some respects it can offer advantages over rival languages.

Tailor-made and easy to learn

For one thing, Basic still tends to be tailored to the target machine, so in the new versions you're likely to find specific commands for controlling machine-specific features like sound, graphics, sprites, a mouse, and so on. Pascal, C and Modula-2 usually try to conform to generic standards regardless of hardware, therefore the version you buy will probably lack these valuable commands. Instead, publishers provide libraries of routines for controlling these non-standard features, but these libraries make programming more complicated.

Basic also remains one of the easiest languages to learn. It uses an English-like syntax, and is fairly relaxed and friendly in dealing with errors. By contrast, C is not at all English-like and can be downright hostile. Pascal and Modula-2 are better in this respect, but they are rigid in the way they treat data and progam development.

This strength of Basic has always been considered by some to be its major weakness. The critics argue that Basic's flexibili-

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Amiga's problematic options

The Amiga is not well-served with alternative Basics, but then it doesn't have to be. **Amiga Basic**, written by Microsoft, is an exemplary version of the language – fast and powerful, it provides lots of machine-specific commands, and for serious programming it features library routines that give full low-level control of the Amiga's multi-tasking operating system.

What it lacks is the ability to produce stand-alone programs and for that reason Amiga owners will find the idea of a Basic compiler appealing. Unfortunately, the current options aren't that good.

Three compilers are available, but each has problems. The most recent is **F-Basic**, a bizarre mix of the good and bad. The good are the powerful programming commands; the bad is the fact that it's a totally non-standard version of Basic, and certainly won't compile your existing Amiga Basic programs.

A better bet from the compatibility aspect is **True Basic**, the latest implementation from Kemeny and Kurtz, the originators of the Basic language. Powerful and standard, *True Basic* versions are available on the PC and Macintosh which makes porting software between these three machines as easy as possible. The problems are that the compiler doesn't produce the fastest code, and to get the most from the system you need three separate packages – the language, the libraries and the run-time module – which ups the price.

Last (with good reason) is **AC Basic** from American publishers Absoft. *AC Basic* is technically the best of the bunch: it will handle all of the *Amiga Basic* commands so you can buy it with confidence that it will compile your existing programs, and it produces very fast code.

The catch is the price – a disgraceful £195 through official channels in Britain. Buy it mail order from the US instead: only $130 – less than £80 at current exchange rates.

ty encourages sloppy programming and the writing of unreadable code. But this has always been something of a red herring: it was always possible to write clean, stylish programs in Basic, just as it's still possible to produce garbage in C or Pascal.

Structured and fast

However, the new Basics have gone a long way towards answering such criticisms, dispensing with line numbers and encouraging structured programming with features such as procedures and sub-programs with label-definitions, and While...Wend and Repeat...Until constructs that all but eliminate the need to use Goto and Gosub commands.

Granted, Basic continues to have some weaknesses, although they are not as damning as some 'language snobs' would have you believe. For example, interpreted Basics like that on the Amiga remain slow and for certain applications Basic is not a good choice. However, that is also true of its rivals – you can't write a good arcade game in Pascal or Modula-2, and while some programmers have used C for fast-moving games, they've been relying on the relative speed of the more powerful computers compared to older 8-bit machines. As more programmers use assembler for faster, more exciting games, the C programmers will find themselves left behind.

Where these rival, high-level languages score is in the moderately fast applications from strategy games to text editors and databases. But even here, compiled Basics like Borland's *Turbo Basic* on the PC, or Glentop's *GFA Basic* on the ST, can produce speeds that can exceed Pascal, and come close to C compilers.

> ***"The critics argue that Basic's flexibility encourages sloppy programming. But this has always been a red herring."***

Perhaps the biggest single weakness of the new Basics is the difficulty of integrating machine code routines into Basic programs. *BBC Basic* was the first to incorporate an in-line assembler, a stroke of genius that was copied by Computer Concepts in its *Fast Basic* for the ST. More such implementations would be welcome.

In the meantime, languages remain a matter of personal preference and of matching language features to program requirements. But Basic is no longer the forgotten has-been. For many amateur programmers, and some professionals, Basic's strengths continue to outweigh its weaknesses ●

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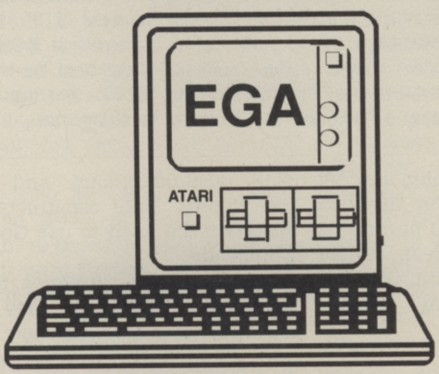

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What is an operating system?

Express steps back into history to explain the master control at the heart of your machine.

In the early days of the microcomputer, the machines were simply collections of dead silicon – a sort of blank electronic canvas on which programmers could create their magic. When these machines were switched on, they simply sat there and hummed to themselves because they were incapable of doing anything else until they were programmed to do so.

Programming consisted of physically altering the hardware by means of switches, a laborious process even if the computer only had 512 bytes of memory (half a kilobyte). But at that time there were no alternatives: you couldn't use a keyboard, because the computer had no way of interpreting the signals from the keyboard.

This was obviously a severe limitation, and one of the first developments was to provide the computer with a better way of communicating with its user, by allowing instructions to be entered by keyboard, and allowing the computer to display information on a monitor. These basic functions had to be provided by special programs stored permanently in the computer in ROM memory chips, so that they were available at all times.

This was the first step towards the 'operating system'. Eventually, more functions were added to this collection of low-level procedures, making computers more flexible and more 'intelligent'.

For example, without some way of permanently storing your programs and the information you want them to work on, every time you wanted to use the computer you'd first have to type in the instructions that make up the program, then you'd have to type in all of the data. Only then could you do any work. The solution is to store both software and data on tape or magnetic disks, but how to do that?

Of course, you could create your own sub-program to send information to the disk, and in the early days that's just what programmers had to do. But this has several drawbacks: it's a waste of time for programmers to be constantly re-inventing the wheel, and if two programs use two different methods of storing data, it's very difficult for them to share information. The same problems apply to writing data to the screen, reading keypresses from the keyboard, and all the other basic operations needed for computers to work.

A programmer called Gary Kildall was among the first to realise the benefits of a standard operating system, so he wrote one: the Control Program for Microcomputers, or CP/M.

The immediate benefit of CP/M was for other programmers: no longer did they have to write their own routines for keyboard, display and storage control – they could use CP/M's. This meant shorter program development times, allowing more effort to be devoted to writing programs that were really useful, not just merely functional.

After this came benefits for users: not only did they get more useful software, but they got more of it. If you were a Pet or Apple II user, you could only use software written for your machine. But if your hardware could run CP/M, you could run any software written for any CP/M computer.

Out of this came the first great microcomputer software: *Visicalc*, a spreadsheet; *Wordstar*, a word processor; and *dBase*, a database. Thanks to CP/M, microcomputers became useful tools, instead of technical curiosities. And that success aroused the interest of IBM.

Up until this point (around 1980), real computers had meant giant mainframes, and the most successful manufacturer was IBM. But sales of CP/M machines had reached such a level that IBM could no longer ignore the upstart and it decided to join in.

● ...one of the first developments was to provide the computer with a better way of communicating with its user

However, CP/M was designed to run on 8-bit computers, and IBM wanted to launch a 16-bit machine. Gary Kildall's company, Digital Research, had a suitable – but less well-known – version of CP/M but IBM decided to to use the disk operating system from a smaller company, Microsoft – the product was MS-DOS (MicroSoft Disk Operating System).

The rest, as they say, is history. MS-DOS is now the most widely used operating system in the world, and more software programs run under MS-DOS than most of the rival systems combined.

So why doesn't everyone use it? The lesser reason is money: naturally, Microsoft wants a license fee from everyone including MS-DOS with their computer, and a lot of people in computerdom feel Microsoft is already quite rich enough.

More importantly, MS-DOS is showing its age (despite having been continually upgraded) and doesn't get the best out of the new hardware.

Most important of all, it only runs on the Intel family of central processors, so it isn't even an option for computers like the Atari ST, Commodore Amiga, and Apple Macintosh which use processors from the rival Motorola 68000 range.

These reasons also explain why there has been such a difference between operating systems for what are generally perceived as 'business computers', and those for home/personal use. MS-DOS (and CP/M before it) wasn't designed as a business operating system, but it appeals to business buyers because it's a standard, because it's well-documented and understood, because there's a vast range of software supporting it, and because it widens the choice of hardware suppliers.

Glossary

Here are brief definitions of some of the more common computing terms.

HARDWARE: The computer itself: keyboard, monitor, circuitry, etc.

SOFTWARE: Programs – i.e. lists of instructions – which control what a computer does. A game or word-processor you buy in a shop is software.

RAM: The memory used by a computer to store programs loaded into it from disk or tape or typed in from the keyboard. The contents of RAM (stands for Random Access Memory, but don't worry about it) disappear when power is switched off.

ROM: Contains instructions stored permanently by the computer.

BYTE: The basic measure of memory. One byte can store a single letter of the alphabet or number up to 256. 1024 bytes make a kiloByte (abbreviated to 'K'). So a 512K RAM computer has 524,288 bytes of RAM memory.

CENTRAL PROCESSOR: The microchip at the heart of a computer (with a name like Z80 or Motorola 68000). Also known as CPU (Central Processing Unit).

LOW-LEVEL: Describes programming instructions which can be operated on directly by the computer's central processor.

8-BIT/16-BIT: Describes particular types of central processors according to how much information they can process at once. A 16-bit processor can process twice as much information in a single step, giving it far greater power than an 8-bit.

"I didn't know my machine had one"

The operating systems called MS-DOS and CP/M are products in their own right – they can be bought as a physical package containing disks and manuals.

You might be forgiven, then, for thinking that if your computer doesn't have anything like this, it doesn't have an operating system. Wrong!

On the older home computers like the Spectrum, C64, BBC Micro and so on, the operating system was built-in. Moreover, it was usually closely tied to the Basic programming language.

This was because there was little commercial software available for early computers. You usually had to write your own, so the Basic language was provided free. And since Basic itself provides a number of operating system features – like the ability to load and save programs and information, and display characters on the screen – it made sense to merge the operating system and Basic.

Further, because these computers used cassette tape for storage, it was a great benefit to have the OS/Basic permanently in the computer – it meant you could use your machine as soon as it was switched on, rather than waiting anything up to 30 minutes for the software to load from tape.

However, once disk storage became cheap enough for home computer use, a built-in operating system was less attractive because it makes upgrades very difficult and expensive (needing a dealer to replacee the old chips).

For this reason, the ST and Amiga (and the PC, as a matter of fact) use a compromise system where most of the low-level parts of the operating system are built-in while others are supplied on disk. Upgrading is now much simpler – if only Atari and Commodore would get round to offering an upgrade.

It also provides considerable stability. The IBM PC has evolved from a relatively simple machine to the very complex and powerful systems available today, yet MS-DOS remains constant and your old software from 1984 should run on your brand-new 80386-based PC next year.

For computers aimed at games players and enthusiasts these things are not as important, and there's a consequent grab-bag of operating systems. Manufacturers like using their own operating systems because it ties you into their hardware – if you want to run Atari ST software you have to buy an Atari ST computer. And then scrap your old collection of Atari 8-bit software. Commodore owners upgrading from a 64 to an Amiga face the same problem.

Although this seems like cavalier abuse of the humble user (i.e. you and me), there's a good reason for it. Most software designed for home computers is games software, and games software almost never makes use of an operating system anyway – operating system routines are convenient but slow, while games need speed above everything else.

Also, the best reason for buying non-standard hardware is because it's technically advanced. However, if the manufacturer used a standard operating system like MS-DOS, you wouldn't get necessarily get the most out of the hardware. (This is a theoretical benefit – you only need look at the Amiga operating system to realise that specially-developed operating systems don't always score!)

So when you're considering what hardware to buy, you have to take the operating system into account. With games software, all bets are off – it's a free-for-all. But for all other applications the pros and cons are simply stated:

Standard operating systems mean a wide choice of software and the assurance that you won't need to change that software when you change your hardware. But the software may not be technically exciting.

Non-standard operating systems mean a smaller choice of software and no guarantees of compatibility, but you're more likely to be getting state-of-the-art programs.

Need to know?

Any particular concepts or bits of jargon you don't understand? Anything you always wanted to know but were too embarrassed to ask? Why not write to: First Timers, New Computer Express, 4 Queen Street, Bath, BA1 1EJ. No question too dumb, no subject too simple, and no condescending replies. Guaranteed!

Technobabble

A weekly assault on computer jargon

Floppy disks ▪ Hard disks

The differences between floppy disks and hard disks cause a tremendous amount of confusion for beginners, partly because – as with so many things in computing – the words themselves are misleading.

For example, once you've seen a 5.25" disk you can understand the 'floppy' tag – hold one by the corner and flap it, and it flops.

Now, take a disk for the Amstrad PCW range, or the now-standard 3.5" disks used by STs, Amigas, PCs and Macs, and the difference is obvious: these disks have a hard shell, and they don't flop under any circumstances. So these are hard disks, right? Er ... no.

The problem is that the term 'hard disk' came into widespread usage before the hard-cased disks that are now so widespread.

In floppy disks, the disk itself is made from a very thin (and floppy) disc of a plastic material and then encased in a protective cover. Such a disk is a 'floppy', regardless of whether the case flops or not.

In a hard disk, the disc itself is a much thicker sheet of metal which certainly is 'hard'. This rigidity allows the disc to be spun much faster, allowing quicker access to information.

The easiest way to tell the difference is in storage capacity. Floppy disks generally hold around 400K to 800K of data, although some can hold as much as 1.5Mb. However, hard disks typically store 20Mb to 30Mb, and capacities of more than 100Mb are not uncommon. Or try to buy one: floppy disks cost around 50p or £1 each; hard disks cost from £250 to more than £1,000.

Another difference between the two kinds is that floppy disks can be removed and carried around, while hard disks are more or less permanently attached to the computer (hence 'fixed disks').

A third name sometimes applied to hard disks is 'winchesters'. One bit of computer lore says this is because IBM's first hard disks had a 30Mb capacity and a 30 millisecond access time – and the Winchester 3030 was the famous Wild West repeating rifle. A less glamorous – but more likely – explanation is the drives' connection with an IBM plant in the American town of Winchester.

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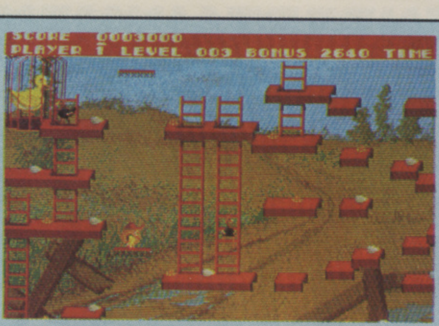

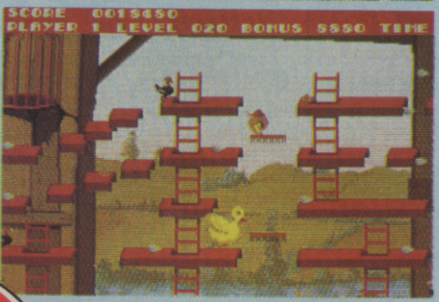

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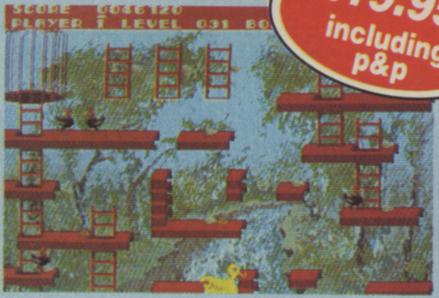

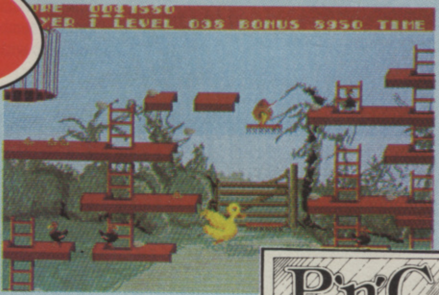

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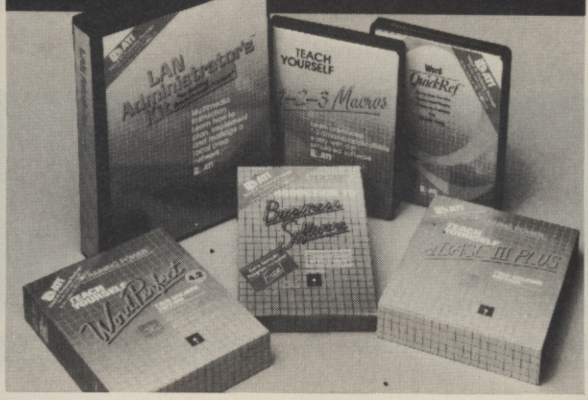

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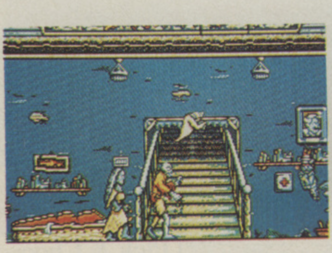
MUNSTERS AGAIN AGAIN **25-1**

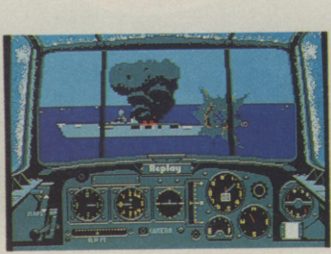
This first release of Alternative's new full-price label is an arcade adventure set in and around the Munsters' family home and starring Frankenstein Herman, vampires Lilly and Granpa, and werewolf Eddie as they attempt to find the kidnapped Marilyn – the unbelievably human one. Excellent graphics provide a great background to a gameplay featuring magic and all manner of ghosties. You even get to drive the dragster hearse.



● Scary ST times as Marilyn goes missing. Also due out on Amiga, Spectrum, C64, CPC, MSX mid-November

BATTLEHAWKS 1942 LUCASFILM **14-1**

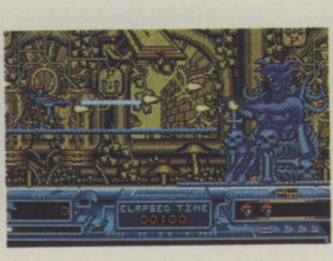
YO!!... LucasFilm zoom out of Hollywood to light up the micro-market using hi-res digitally rendered images scaling through 1500 magnifications. *Battlehawks* gives you 256 colour VGA graphics at max pace. Realism is the name of a game appealing to combat sim-buffs with air-speed, attack angles, weapons and tactics presented with a view to emulating the visual intensity of WW2 newsreel footage. Fly wildcat fighters, Dauntless dive bombers and Avenger torpedo bombers as you attempt to take out every Jap within a million miles of the Pacific.



● On the PC, the state of the art of Star Wars circa 1942. Also due out ST and Amiga late December

BAAL PSYGNOSIS **16-1**

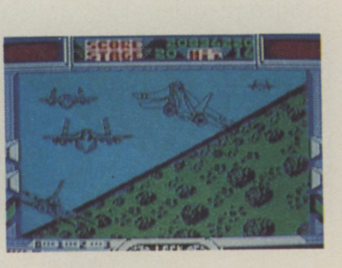
Psygnosis' graphics have always guaranteed good sales and this one will certainly put them in the running for the Christmas high stakes, even if they don't have quite the marketing clout of the bigger publishers. You're in command of an elite force of Time Warriors up against the supreme God of Evil in a strategic eight-way scroller of 250 hi-def screens. But you'll have to deal with 100 monsters and 400 traps across 3 multi-level domains in a bid to find the 18 parts of the War Machine capable of finishing the job for you.



● The ST shows off yet more great graphics from Psygnosis. ST and Amiga versions out mid-November and due out on C64 in December

AFTERBURNER MEDIAGENIC **7-4 FAV**

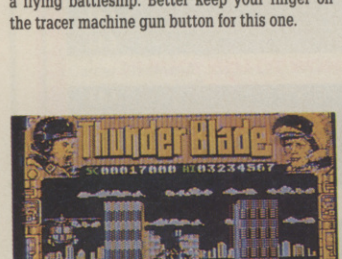
Its massive success in the arcades this year has to make this official licence the favourite. Backed by a massive promotional campaign, Mediagenic's hot-shot for the top-spot takes you to the skies in your F-14 to gun your way through endless enemy airspace. An ultra-fast combat classic with 16-bit conversions by the high-flying Argonauts (of *Starglider 2* fame), *Afterburner* shifts at velocities only your neural receptors will handle while you pitch that 360 roll and search for a mains socket to plug yourself into.



● On the C64 and flying high in the shoot-out stakes. Also due out on Amiga, PC, in late November and Spectrum, 64, CPC, MSX in early December

THUNDERBLADE U.S. GOLD **2-1**

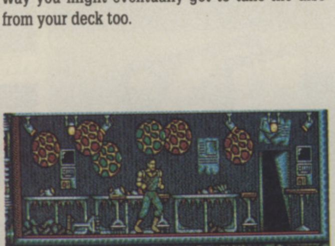
Hoping for another *Out Run*, U.S.Gold are pulling out all the stops with conversions of the Sega arcade smash-hit. Via over-head and over-shoulder viewpoints you control your attack copter through sky-scraper canyons on your way out to sea and a huge, heavily-armed aircaft carrier and its gunships. Survive this and its on to deserts and forests in a bid to take out a flying battleship. Better keep your finger on the tracer machine gun button for this one.



● Choppers at the ready for ST Thunderblade. Also due out on Amiga, CPC, Spectrum, C64 mid-December

PRISON CHRYSALIS **200-1**

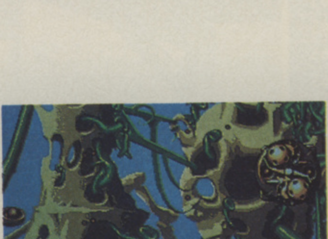
Another new software label's first release and this one's a graphic adventure based on a penal colony planet where you find yourself after the location of the parts of an escape ship. Of course, these bits and pieces are closely guarded – in this case by mutant lifeforms. After searching through screen after screen of desolation and taking out hordes of mutants on the way you might eventually get to take the disc from your deck too.



● Escape to outer space with Prison on the ST. Also due out on Amiga late December

PHANTOM FIGHTER MARTECH **30-1**

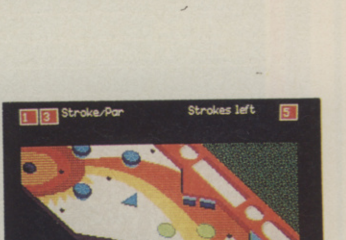
Phantom's press release states, incredibly, that the ST couldn't handle the graphics on this one – which against the PC's CGA and TGA specs takes some believing. Nevertheless, this seek and destroy arcade combat sim takes you to the multi-coloured hues of alien landscapes as you attempt to clear the skies of everything but clouds. With missiles, cannons and hi-g manouverability this may not be too difficult.



● Amiga owners will be among the few lucky enough to see this up and running. Also due out on PC mid-December

ZANY GOLF ELECTRONIC ARTS **100-1**

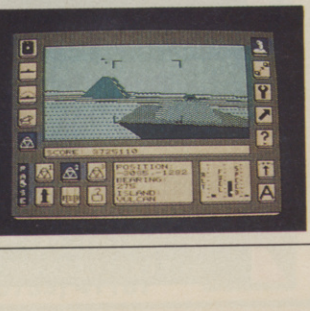
Crazy Golf from the nth dimension constructed as nine arcade games in one as you battle your way through a host of holes featuring dart laser beams, particle rays and transporter pads. A simple enough scenario taken to its wildest ends, *Zany Golf* also includes moving walls, magic carpets, castles, windmills, pinballs and hamburgers all strung together with great music and animation.



● Weird ain't the word for PC Zany Golf. PC version due out early December. Also due out on ST and Amiga in new year

CARRIER COMMAND RAINBIRD **100-8**

The game that received unparalled acclaim for its filled 3D animated graphics on the ST, cruises onto the Speccy at a cool 200 mph along with its Manta fighters, amphi-tanks, aerial drones and lasers to present you with the task of securing a volcanic archipelago from a rebel carrier in a bid to tap seismic energy. Perhaps the game's most endearing feature is the real-time icon control of multi-view synchronised action – you can have all your attack vehicles on the go at the same time and switch between them as tactics demand. It's too early to say whether its appearance on the Spectrum will require a drastic reduction in the number and variety of screens to be found on the 16-bit predecessors but gameplay alone should ensure good sales. Don't be daunted by its depth though – you can opt for an all action game in which you're dropped into the middle of a random scenario deemed to take place midway through a strategy game. Either way, *Carrier Command* involves a massive and complex combination of both strategy and arcade action and could well keep you occupied for years.



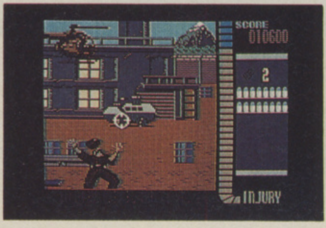
● Carrier Command makes it onto the Speccy – will it be a tight squeeze ? Already out on ST & Amiga. Due out on Spectrum early December and PC, MAC, PCW, CPC, C64 January

TMAS NO. 1

Britain's leading leisure software houses are doing the final grooming of their runners in the year's biggest race: the Christmas Stakes. Last year U.S. Gold's* Out Run *romped home by some 300,000 lengths. Which full-price software title will be first past the post this time? ANDY STORER visits the Express bookies and previews 18 top contenders for the big Gallup.

OPERATION WOLF OCEAN **9-2**

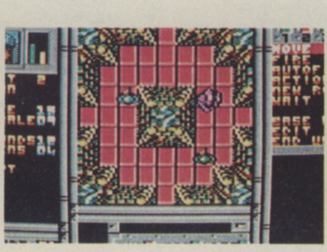
Possibly the most definitive shoot-em-up of all time. This multi-format six-stage carnage extravaganza, licensed from the coin op smash hit, finds you with machine gun, grenades, rockets and dynamite up against millions of marauders just dying to send you AWOL forever. Civilians, nurses and the hostages you're meant to be rescuing are the only people likely to interrupt your continual assault on relentless attacks by fast-scrolling tanks, choppers, gun-boats and commies. Backed by Ocean's formidable marketing strength, this has to be a major contender.



● A lone CPC wolf among the pack of versions due. Also due on ST, Amiga, PC, C64, Spectrum in early December

OUTPOST FRONTIER GAMES **2000-1**

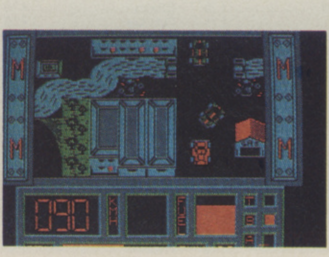
Something of an outsider, being first off the production line from a new software house. They'll be concentrating on 'releases which combine strategic depth with playability'. Here you infiltrate a guarded outpost by controlling four marine units in a step by step assault and see the results in an arcade style animated sequence. Featuring a repeatable, semi-random game area, and menu-driven command system you'll have a choice of six interlinked missions per game.



● Step by step assault on the C64 version, out in November. Other versions planned but no dates as yet

MOTOR MASSACRE GREMLIN **6-1**

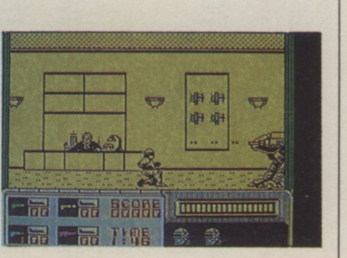
Prolific publishers Gremlin are hoping to be home and dry in a flooded market with this post-holocaust drive-em up where you're one of a bunch of survivors out to stay alive and keep ahead against all odds. You have to fight your way to the Demon Dome and compete in a carnival of motor destruction. Sounds like you'll need a touch of the old Mad Max driving skills for this one – i.e. kill everything that moves.



● Motor-Massacre auto-firing on the CPC. Also due out on Spectrum, C64, ST and Amiga mid-November

ROBOCOP OCEAN **7-1**

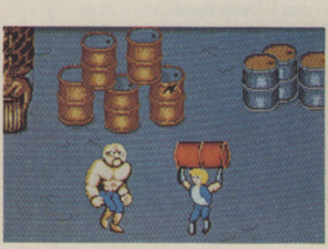
Another licensed outing from Ocean – probably among their best – this one being signed up before the film was made. ED209, the famous psycho-cybernut of *Robocop* the movie is out on the prowl with his friendly M60 machine guns in this futuristic carnage epic due out in the New Year. After its success on celluloid, *Robocop* looks like being a scream in silicon too. Hopefully, some of the movie's dark humour will underpin what could turn out to be one helluva shoot-em-up.



● Spectrum shoot-outs with a roving robocop – Spectrum version due out mid-November. Due out on C64 and CPC late November

DOUBLE DRAGON MELBOURNE HOUSE **3-1**

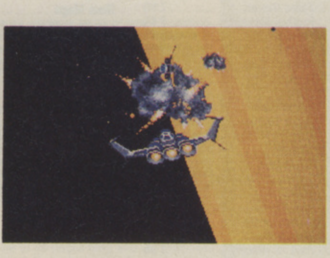
Melbourne House's biggie for the Yuletide yahoos – a compulsive pseudo-3D scrolling beat-em-up in which you have to find and rescue your girlfriend from a whole bunch of psychos using the delicate skills of streetfighting. Use baseball bats, knives and guns with unreserved calm among scenes of urban tension featuring, among other adversaries, leather-clad women with whips. A one or two-player karate clone where you get to kiss the girl on completion. That's if you haven't fallen for the whipping women instead!



● Oil cans often come in handy as crude weapons in ST DD. Also due out on Amiga, PC, 64, Spectrum, CPC mid-November

GALACTIC CONQUEROR TITUS **25-1**

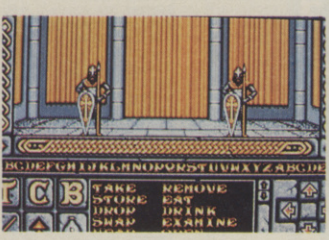
You are the Betadroid Kal. Really. Located in the centre of your galaxy is Gallion, HQ of the Stellar League, whose surveillance units have detected an enemy invasion. So it's time to zip into your Thunder Cloud II fighter, get out to the remoter regions and do the business. *Galactic Conqueror* will attempt to combine fast coin-op action with strategic sophistication. What are you waiting for? Your brand new Fighter arrives next week.



● An explosive smash for the Amiga? Also due out on ST and PC late November

GALDREGON'S DOMAIN INTERCEPTOR **12-1**

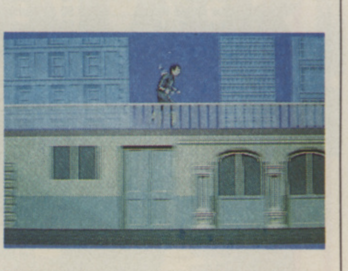
Interceptor enter this impressive interactive role-play fantasy sim into the end of year challenge. You take the role of a barbarian hero on a search for five gems held by powerful creatures in the Lands of Mezron. Rather than merely exercising your various combat skills you must gain information and employ stealth and cunning to outwit your various opponents. Casting a fair amount of magic might not go amiss either.



● ST Galdregon's – a main contender? Also due out on Amiga mid-November

SHINOBI REBEL **25000-1**

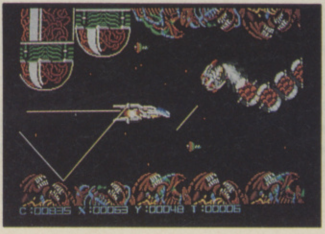
5 Ninja missions each with 4 seperate stages take you through sword-spearing and star-throwing cut with magic on a single-handed rescue mission. Not only do you have to use your Ninjutsu mastery to rid the screens of thugs and samurai – you also have to take out a helicopter! How you might achieve this with only a sword and throwing star would probably tax even the greatest of zen philosophers. Unlikely to be a Christmas hit – it's not out until January!



● An early Amiga screenshot of the star-throwing Shinobi. Also due out on ST,C64,CPC,Spectrum in January

R-TYPE MEDIAGENIC **4-1**

Mediagenic's second bid at the top spot with this arcade conversion puts you in control of an R-9 interstellar craft through 8 stages of monstrous mayhem in a spectacular shoot-em-up which you'll need to continually replenish your power stocks to complete. If you thought you'd overcome every other arcade epic with ease then be prepared for a nasty surprise. A top-notch horizontal scroller in the vein of *Nemesis 3*, *Salamader* et al, *R-Type* features massive sprite spaceships and disgusting creatures which'll require full use of your ship's mega-weapon. Probably the best coin-op scroller ever to have made the arcades.



● The ST version of this superior shoot-em-up scroller. Also due out on Spectrum mid-November and C64, CPC early December. Amiga version to follow in the New Year

AND A FINAL OUTSIDE BET

Despite the dubious merits of killer arcade conversions, our track-side long shot is *Giants* from U.S. Gold – *Out Run, 720, California Games, Rolling Thunder, Gauntlet 2* – all in the one pack for 8-bits for around £15 due late November.

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G.L. Hotshot	6.99

SUCKER PUNCH OF THE WEEK

FOOTBALL DIRECTOR II
£11.50
Available on
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Spectrum
128/Plus 2/Plus 3
Amstrad Disc

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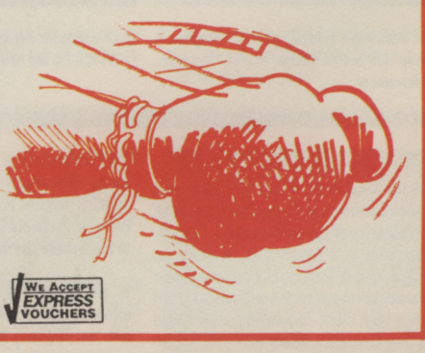

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For the user who requires even more RAM than the 520 or 1040 ST's offer, the new MEGA ST computers are now available. There are two MEGA ST's, one with 2Mb of RAM and the other with a massive 4Mb. Both new computers are fully compatible with existing ST's and run currently available ST software. The MEGA ST's are styled as an expandable Central Processing Unit with open architecture and a detachable keyboard. They are supplied with GEM, a free mouse controller and all extras as with the 520 or 1040. Prices are as follows:

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By Bus: 266, 714, 716, 290, 30, 72, 73, 74.

Car parking facilities available at the Novotel.

DATABASE EXHIBITIONS

Electrifying experience

After using my 520ST for a while, when I switch off there is a crackling sound from the back of the computer. Is this normal or is the machine faulty?

It depends on exactly where the crackling sound is coming from. If it's from the monitor it's more than likely just a discharge of static electricity which is perfectly normal and nothing to worry about.

However, if the source of the noise is the machine itself you need to have it checked. Start by making sure that the electrical plug is correctly wired up and all connections are secure. Then check the connection between the machine and the power cable which should be firmly seated in the socket. Make sure that things like your mouse and monitor cables – or those from external drives or printers, if you have them – are not pulling the power cable loose.

If the ST continues to crackle when you switch off, have your dealer take a look at it. It probably isn't dangerous to you, although you might get a painful shock, but any stray electricity is definitely dangerous to your machine and could cause some very expensive damage.

Reach for the stars

I am ready to upgrade from my Spectrum 128 to a 16-bit computer like the ST or Amiga. However, I want to combine computing with my other hobby of astronomy.

Can you suggest the best computer for this, and tell me what kinds of software are available for astronomers?

There are lots of pros and cons to this kind of question because any computer can be a useful tool in any kind of hobby. For example, without looking at specialist astronomical software, you could make extensive use of word processing, database and graphics software to keep a log of your observations, compile a database of the objects that interest you, draw diagrams and make sketches.

In terms of specialist software, the Amiga has at least one astronomical program – Planetarium from Microllusions – but I haven't been able to track down anything on the ST. Your best bet might be through public domain libraries – which leads us to PC-compatibles.

Generally speaking, PCs are your best bet for any kind of specialist subject because they boast a vast amount of commercial and PD software. If you check out some of the American astronomy mags I'm sure you'll find a lot of software on PC. Moreover, if you want to take your computer/astronomy tie-up further – like computer-controlled telescopes, for example – the PC has better expansion capabilities than either the ST or Amiga, especially in areas like real-time control.

Lasers burn up budgets

We need a reasonably good desktop publishing system to produce company advertising leaflets. We'd like to do a newsletter for our clients too.

From our investigations, it looks like a Mega ST with Atari laser printer is the cheapest system at around £2,000, but even this is stretching our budget a bit. Is there a cheaper way to go?

The laser printer is the most expensive part of the system but obviously we need that for output quality. Would a cheaper computer work with the printer?

You've got your reasoning backwards here: in setting up a desktop publishing system, the last thing you need to buy is a laser printer.

The reason is that there are now a number of typesetting bureaux around the country who will happily output your designs on laser printers (or, when quality really counts, on true typesetting machines) for a very reasonable cost.

Unless you're going to be cranking out a massive number of pages, your expensive laser printer will be sitting idle a lot of the time.

If you think you can get your money's worth out of a laser, think about the Hewlett-Packard DeskJet which will give you near-as-dammit laser quality but at a price of around £600 if you shop around.

Back to the drawing board

I'm delighted with my Amstrad PC and the accompanying GEM software but there's one catch – I'm finding it very difficult to draw with a mouse. It's particularly difficult (impossible) to trace pictures and illustrations.

In a recent TV program I saw people using what appeared to be a pen and some kind of special drawing board attached to large computer systems. Is there anything similar for the PC?

Yep, loads of 'em ... well, two or three anyway. They're called digitising tablets and popular PC versions are made by Cherry and Summagraphics, as well as a couple of smaller companies.

Unfortunately you'd have to be seriously disenchanted with your mouse to consider one: prices run to around £400-£500 – almost as much as your entire PC. However, if you're that desperate, any large PC dealer should be delighted to sell you one.

There is a low-tech – and considerably cheaper – alternative. Acquire a packet of overhead transparency film – any good stationery store, like Ryman's, will have it. Trace the drawing you wish to copy onto this, then place the film against your monitor screen where – hey! – it will stick thanks to the static generated by the monitor.

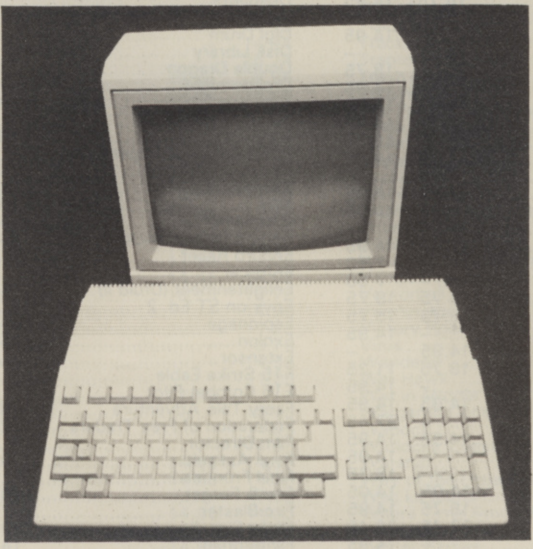
You can now copy the image using the on-screen pointer in your graphics package. Experiment with screen colours to give you a nice, contrasty image which will make the on-screen copying easier.

Amiga growing

After some eight months with my Amiga A500 I've decided it's got to grow – but how? I have a limited budget and can't decide whether to buy a memory expansion or a second disk drive. What would you recommend?

I'm thinking about buying an Amiga A500 but I'm worried about the lack of expansion possibilities. Most add-ons seem to be for the A2000 but I can't afford the higher price.

I know there are memory expansion boards for the A500, but what about hard disk drives, and things like the PC bridgeboards?



● Commodore's Amiga A500: what happens when you want to expand it?

The lack of expandability is one of the great weaknesses of the A500, but is the price to pay for the physical layout of the machine – you can't fit much into a case the size of the A500's (ST owners face similar difficulties).

As a first step in expanding your machine, I'd recommend you go for a memory expansion. More memory will probably be more useful: it will allow you to handle larger amounts of data, you can write longer programs (if you're a serious programmer), and it will overcome a lot of the tedious disk-swapping because it gives you the space to create a usable RAM disk.

By contrast, not much software actually makes use of a second disk drive, and because an external drive uses up some of your precious RAM, many programs require you to remove the drive before they'll run.

As to further expansion, the choices really are limited because most manufacturers – including, sadly, Commodore itself – seem to regard the A2000 as the only machine worth serious attention.

However, there is one promising route. US company Pacific Peripherals produces an expansion chassis for the A500, called SubSystem 500, which sits beneath the Amiga and takes two A2000 expansion cards. So you can have more memory, or a bridgeboard for PC-emulation, or an internal hard disk, or most other 2000-specific add-ons.

There is no official UK distributor of the product, but you could write to Pacific Peripherals, PO Box 14575, Fremont, California 94539, USA.

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ST CLUB

The great hard disk swindle

Why do ST hard drives cost so much? Atari's adage, 'Power without the price', palls when you learn that their 20Mbyte SH205 costs just five pence under £600. Compare that to equivalent PC drives which drop in at little more than £200. If you were at the PC Show you might have noticed 10Mbyte drives with controllers going for less than £60. What's going on? Is buying an ST hard disk the greatest rip off since BP shares?

Unfortunately, several factors are to blame. The first is the hard drive mechanism. But that's a weak argument as all hard disks face that problem.

Secondly, the case and power supply add to the bill. Most PC hard disks fit into an expansion slot and draw power from the machine – no casing, no power supply, no big bills.

Finally, a problem which PC users don't have – the astronomically-priced ST drive controller. Atari's DMA port is used for connecting a hard drive to an ST; it's because of this port's flexibility (it can drive CD ROMs, laser printers and so on) and the fact that the controller required to speak to the bus is rare that the price is so high.

Oh, and of course there's something called profit margin.

Things can only get better. Especially since Third Coast Technologies (0257 426464) announced a 20Mbyte drive for £399. This has sparked off a spate of abuse from Supra, another hard drive manufacturer, who claim that Third Coast simply recondition drives (this basically means yanking a drive from an old machine and polishing the rusty bits). Anyway, Supra are worried enough to have knocked £50 of their drive prices. A 20Mbyte drive now costs £549.95 from them. Atari meanwhile, are staying cool.

On the subject of hard drives, what ever happened to Silicon Systems' Big Disc? It made a brief appearance and then vanished completely. All can be revealed now...

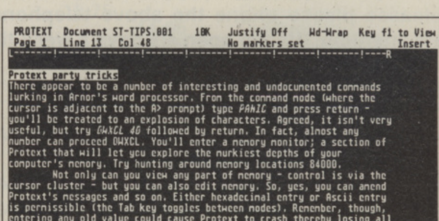
The drive was a joint development between Eidersoft and Silicon. For two years Eidersoft pumped huge amounts of cash into drive research and development. I won't mention the sum involved, suffice to say it's embarrassing. Silicon forged ahead with the software and eventually decided to release the drive. Eidersoft didn't. Silicon became disillusioned and decided to pull out.

The drive still hasn't appeared with an Eidersoft tag, but the latest rumours suggest that it might soon.

Protext poetry

Forget windows, icons, mouse and pointer – who needs then when doing straight text processing? When plain writing is all you want, Arnor's *Protext* is the business. It's what I use for writing this column; the resultant file is XMODEMed to an Apple Mac. *Protext* doesn't have a selection of screen and printer fonts, options for importing graphics or flowing text down several columns. If you want these sort of features, then you're better off with a DTP package.

Now on to the main point. Hidden in the depths of *Protext*'s command line are various interesting and undocumented features. Try typing PANIC at the command line – but don't panic! Perhaps more useful is the QWXCL command which has a single parameter following it. The parameter is a hexadecimal number referring to a memory location. Yes, *Protext* has a simple memory monitor built in. The instruction QWXCL ADA0 will reveal the start of *Protext*'s error messages.



```
PROTEXT  Document ST-TIPS.001    10K   Justify Off    Wd-Wrap  Key f1 to View
Page 1   Line 13   Col 48              No markers set                  Insert
L-------!-------!-------!-------!-------!-------!-------!-------!----R

Protext party tricks
There appear to be a number of interesting and undocumented commands
lurking in Arnor's word processor. From the command mode (where the
cursor is adjacent to the A> prompt) type PANIC and press return -
you'll be treated to an explosion of characters. Agreed, it isn't very
useful, but try GWXCL 40 followed by return. In fact, almost any
number can proceed QWXCL. You'll enter a memory monitor; a section of
Protext that will let you explore the murkiest depths of your
computer's memory. Try hunting around memory locations 84000.
        Not only can you view any part of memory - control is via the
cursor cluster - but you can also edit memory. So, yes, you can amend
Protext's messages and so on. Either hexadecimal entry or Ascii entry
is permissible (the Tab key toggles between modes). Remember, though,
entering any old value could cause Protext to crash thereby losing all
  PROTEXT v3.50 (c) Arnor 1988   Printer (P) EPSON      Directory \
00050EA0  4A 75 6E 00 4A 75 6C 00  41 75 67 00 53 65 70 00  Jun.Jul.Aug.Sep.
00050EB0  4F 63 74 00 4E 6F 76 00  44 65 63 00 00 05 0E 8C  Oct.Nov.Dec....î
00050EC0  00 85 8E 98 00 85 8E 94  00 85 8E 98 00 85 8E 9C  ...É...ö...ÿ...£
00050ED0  00 05 0E A0 00 05 0E A4  00 05 0E A8 00 05 0E AC  ...á...ñ...¿...½
00050EE0  00 05 0E B0 00 05 0E B4  00 05 0E B8 53 75 6E 00  ...ã...œ...õSun.
```

● One of Protext's hidden features.

Starglider II conquered

Jez San and his Argonauts certainly know how to push the ST to the limits. What a game! Following are some hints if you're having trouble, and a cheat to ensure you can't lose (the cheat is in the last paragraph, so don't read it if you don't want to spoil the fun).

What a deal

Silica Shop (01-309 0300), Atari's main ST distributor, have come up with an incredible 1040ST-FM bundling deal. For the usual 1040 price of £499.99 you get one of the new modulator-fitted machines plus VIP Professional (Lotus 1 2 3 spreadsheet clone), Microsoft Write and Superbase Personal.

Now that's what I call good value. The software alone is worth £359.85. The 'Professional Pack' as it is being called is also available with mono or colour monitor for an extra £100 or £300 respectively.

Nine items are required to manufacture the neutron bomb:

Case of nuclear fuel – located on Aldos planet surface.

Lump of mineral rock – exchange pyramid at main depot on Apex.

Crate of castrobars – swap petrified tree at main depot on Apex.

Keg of Vistan wine – trade bouncing ball at depot 1 on Castron.

Egron mini rocket – on Vista planet surface.

Asteroid – asteroid belt located between planets Apogee and Millway.

Flat diamond – change for Ergon mechanical whale at main depot on Questa.

Cluster of nodules – located on Dante planet surface.

Professor Halsen Taymer – can be found in his car burning around Broadway.

Without giving too much away, take all the objects to depot 1 on Apogee.

Now for the ultimate cheat. Load and play the game as usual. Press F for fixed sights. Halt the ship (pull back on the mouse) and press Delete to pause the game. Type WERE ON A MISSION FROM GOD (make sure to include spaces, and no there isn't an apostrophe in the WERE) and press 1 on the main keyboard. You will know if the cheat is activate as the shield and energy levels will drop to a fixed height. Press K for a full stock of weapons – that includes the neutron bomb – and press K to replenish weapons at any time.

Richard Monteiro

The next 8 pages contain TEN columns, one devoted to almost every significant computer in today's market. Each has been crammed with as much info, snippets and comment as our writers could fit. We think you'll find the one for your machine an essential weekly read.

PC UPDATE

GEM gems

There are those who would dismiss Digital Research's graphics operating system GEM as just one more thing to get between a person and a PC. There are certain functions, though, that are actually easier to carry out under GEM than from the MS-DOS command line. Renaming a directory, for instance, is easy under GEM, but impossible without a custom written routine under DOS. In GEM you highlight the folder, Show Info from the Disk menu and type in the new name – simple as that.

Then again, how would you set about moving a directory with a number of levels of sub-directory beneath it? In DOS it would be very inconvenient; you'd have to set up a copy of the directory structure and copy the contents of each directory in turn. Under GEM, you drag the folder representing the top directory in the tree to the drive or directory you've picked for its destination. GEM will then happily copy folders and files in a single (though sometimes rather long) operation.

When you install GEM on a hard disk it expects to have its start up files in the root directory. This may not be convenient, or you may want to package GEM away in its own sub-directory. One of the easiest ways of shifting it all is to install it into the root, run it and move the whole structure to its own sub-directory from the GEM Desktop. Exit to DOS and add a line to your AUTOEXEC.BAT file along the lines of SUBST G: C:\<directory> where <directory> is the name of the sub-directory now housing GEM. You can now run GEM by switching to the fictitious G: drive. GEM still thinks it's in a root directory (of drive G:) and is quite happy with the arrangement.

One born every minute

Ian Sinclair must deserve some kind of record as this country's most prolific computer book author. His 103rd book Desktop Pubklishing on a Shoestring is something of a gift for Mirrorsoft, whose Fleet Street Editor/Publisher series of DTP programs it is completely written around. That said, much of the information is relevent to desktop publishing, whichever program you choose to use.

The book is very well illustrated, with diagrams, page sections and clip-art appearing on nearly every page. The book goes into most of the technical areas of DTP use and offers some guidelines on layout and typography, though these areas deserve more detailed coverage. Its 132 pages include three appendices and a decent index, the scourge of all reviewers.

If you have Fleet Street Editor, or are tempted by the new version 3 just hitting the streets, this book is a useful adjunct to the program's manual.

Fonts on the fly

If you run a Laserjet compatible laser printer and are thinking of adding further soft fonts to it, take a look at the Glyphix fonts recently imported from the States. Rather than the usual soft font technique of creating the size and style of a font once and using up valuable hard disk space, Glyphix take a leaf out of the PostScript book and creates fonts as their needed, in RAM.

This gives a great saving in disk space and, although it takes slightly longer to create a page than with fixed fonts, the overall saving in space and cost is well worth it. In addition to the savings in space, you also save money, as you get four complete font outlines in each pack, for £100. There are currently six packs available, covering standard serif and sans serif fonts, as well as decorative, fixed pitch and book fonts.

Special font managers are available to run the fonts from within *WordPerfect* and Microsoft *Word*, and they also work with *WordStar*, *Ventura* and *Pagemaker*. More information from The Ctrl Alt Deli on 0908 662759.

Coop

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PQRSTUVWXYZabcd
efghijklmnopqrstuv
wxyz1234567890!@#
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Direct selling USA

Could it be that the great US of A is finally noticing Britain as a potential sales market for micro software? In the last couple of months one American company has taken the fairly dramatic step of advertising mail-order direct to this country.

Although it's been possible to order software and hardware directly from the States for some while now, by quoting an Access or Barclaycard number, US Express Technology is now taking full-page adverts in British magazines. The company offers free phone order reception (yes, Freephone to the US!) during most of the GMT working day, and fast delivery by Courier of PC goodie's priced in pounds sterling.

One of the big advantages of buying from the States is the price differential across the Atlantic. U.S. Express can offer Norton *Utilities* at £38, Microsoft *Word* for £156 and *Pagemaker* at £366, all delivered to your door in 2-4 days. This is considerably cheaper than buying locally (though not all quoted prices are lower). The company has also introduced a Freephone line to handle any returns, should their be a problem with the software, and a customer service department which can also be called Freephone. This removes the other main snag with ordering from abroad – with a guaranteed backup some of the hesitation should be removed.

Richard Gnant (sic) of U.S. Express is keen to point out that the company was set up from the outset as an exporter, and handles no domestic US sales at all. They've been planning their current operation for over 18 months and employ a solicitor and customs expert full time to handle any customs problems – there are apparently still many software products it is illegal to export from the States, even to friendly nations!. The company ships to Europe and as far afield as Turkey and Saudi Arabia, but is still looking to the UK as their initial market. They're actively looking at the possibility of shipping hardware as well as their wide range of PC software products. Their international Freephone number is 0800 89 1073.

Simon Williams

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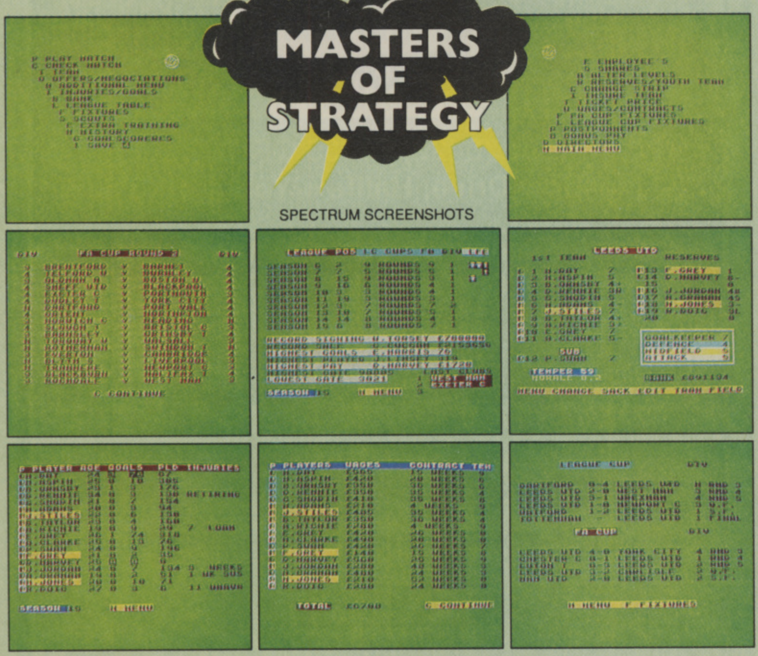

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AMIGA BLITZ

Lost Oppotunities

When are Commodore ever going to learn? The company's record where advertising the Amiga is concerned has been, not to put too fine a point on it, pretty lousy.

Even Commodore's much touted recent advertising campaign in both the general and trade press has been almost laughable. Unfortunately, laughing is the last thing you should be doing when you consider the sales oppotunities Commodore have let slip through their fingers because of inadequate advertising.

"Why should this be of any concern to me?", I hear you ask. The answer is simple. The more Amigas Commodore sell, the more likely software houses are to support the machine.

This has been one of the Amiga's main stumbling blocks in the past; the public wouldn't buy the machine because there was no software and software houses wouldn't support the Amiga because sales were not high enough. This vicious circle is one the Amiga has been able to break out of only within the last few months.

The current upsurge in the Amiga in enjoying is not a result of any advertising by Commodore. The £100 price decrease in July of this year merely provided the incentive for many people who were still undecided to take the plunge. The real Amiga sales people are existing owners and the few specialist Amiga dealers. No amount of 'abstract advertising' from Commodore can compare to the value of allowing a potential customer 'hands on' access to an Amiga. As many will no doubt agree, impressing someone with an Amiga is not a particularly difficult task.

What is really needed from Commodore is for them to stop promoting themselves and start giving the buying public as much exposure to the capabilities of the Amiga as is possible. The Amiga's greatest and probably most used feature is its graphic capabilties and its suitability for applications such as DeskTop Video. A greater advertising push in the vertical, as well as the home computer markets can do the Amiga nothing but good.

Arthur C Clarke's Amigas

Believe it or not, one of the greatest brains alive is an avid Amiga fan! Clarke, author of the best selling book 2001: A Space Odessy, has been a fan of the Amiga ever since the release of the original A1000.

In a recent Central Television production, Clarke along with fellow brain-busters Carl Sagan (he of Cosmos fame!) and Stephen Hawking met to discuss matters far beyond the comprehension of mere mortals. Clarke reputedly used his Amiga 2000 extensively during the two hour long brain-racking session. Plans to screen the meeting are still unclear and even if it reaches the nation's screens, it will almost certainly appear in a vastly edited form.

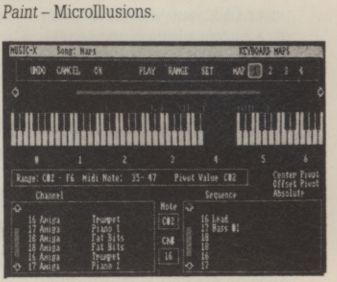
Music to your ears

There are some exciting products on the way for Amiga musicians. Most noteable among the new arrivals is EiderSoft's new Amiga MIDI music system and Activision's professional sequencer, *MusicX*.

The Amiga Music System is a complete music creation package that combines all the tools of the modern musician in one completely integrated system for under £200. The package includes an enhanced version of EiderSoft's ever popular sound sampler/editor, *ProSound Designer* as well as the recently released companion product to ProSound, *Pro MIDI Plus*.

What really makes the Music System a definite contender for the serious musician is the inclusion of a MIDI interface and MIDI compatible keyboard. MIDI is now accepted as the standard for the connection of musical instruments; therefore MIDI support is seen by most as a neccessity rather than a luxury for any package that aims to be taken seriously.

Probably the most significant music software release for the Amiga is Activision's *MusicX* package developed by the American software house who brought you *Photon Paint* – MicroIllusions.



16 Amiga Trumpet
17 Amiga Piano 1
18 Amiga Fat Bits
18 Amiga Fat Bits
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16 Lead
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18
16
17

● *MusicX*: the keymap editor page

Readers of any of the American Amiga magazines will no doubt have noticed that MicroIllusions have been advertising the product with glossy, full page colour adverts for over a year but as yet no product has appeared. The reason for this? 'Continued Development and update...' according to MicroIllusions.

MusicX is a full featured MIDI sequencer/patch librarian that looks set to take on the popular Mac and ST packages on their own terms and win. From the various press releases, informed opinions and the usual gossip channels, *MusicX* looks like being a real giant killer of a package.

The list of features offered is growing daily as the programmers add more and more modules in an attempt to keep the package up to date. The major features include realtime MIDI filters, full SMPTE support (SMPTE is a system for synchronising MIDI with video equipment), a generic patch librarian and promised third party support.

The battle for hearts and minds

Within the music industry, the top dogs are undoubtedly the Apple Mac and the Atari ST. The Amiga has until recently failed to be seen as a viable alternative but signs are that slowly but surely more and more Amigas are creeping into the recording studios of top musicians.

The attraction for most musicians is the Amiga's multi-tasking capabilities and powerful sound chip. While you are unlikely to hear the Amiga singing its heart out on the next Pet Shop Boys album, the sound facilities are used extensively when composing new material.

Another benefit that the Amiga offers over the leading machines is the ability to synchronise sound with video effects equipment. Top group Bros have plans to integrate a network of Amigas into their next tour for this very reason.

Everything sounds wonderful so far, doesn't it! Unfortunately, *MusicX* is designed as a professional package and will undoubtedly carry a suitably professional price; around £300 seems to be the concensus of informed opinion. Expect to see (hear?) *MusicX* by the end of the year.

Jason Holborn

SPEX

R-Type is my type

If you feel envious of the colossal memory, amazing graphics, stereo sound and cute mouse all found on the local Yuppie's 16-bit machine, I can only suggest you visit your software supplier and demand a copy of Electric Dream's *R-Type*. It's a game which will restore your faith in our rubber (or plastic) friend.

Converted from the 10p gobbling IREM coin-op, *R-Type* is a horizontally scrolling shoot-em up in the finest tradition. Gain your revenge on the evil Bydo Empire by flying through eight levels, each swarming with a variety of alien nasty.

The enemies you meet along the way are tame compared to the end of level guardians, though. The creature at the end of the first stage occupies half the screen, waggles his deadly tail and spits spinning discs at you.

Defeating him will mean upgrading your weapons system by collecting tokens. There's a wide range of weapons on offer including helix lasers, the graphically impressive reflective laser, homing missiles and a pool, which can be put in front of or behind your ship as a shield.

Even the standard blaster you start with can be quite powerful; rapid bashing of the fire button causes a steady stream of shots, as you would expect. Hold it down and a meter at the bottom of the screen starts to rise. Release when your laser is fully charged and you unleash a huge meteor-shaped bolt, not conducive to the general well-being of the recipient. One of these mega-shots can take out three or four aliens at a time so it's worth charging up whenever possible.

R-Type's played in glorious technicolour without a hint of colour clash. This means it's better looking than the drab monochrome of other arcade conversions. The frantic action and satisfying addictiveness of the original is also resident making this a pretty damn impressive Spectrum blaster.

Out now, it's worth every penny of its £9.99 price tag.

Oh why are we waiting?

When Miles Gordon Technology announced their Spectrum compatible SAM micro it was enough to get Speccy enthusiasts very excited. There was a 256k computer with an improved graphics display and networking facilities – brilliant for multi-player games which we could upgrade to and still run all our Spectrum software on. Numerous delays have meant SAM probably won't go on sale until the new year with a preview at the December Microfair.

Launch price is expected to be £150 with a 3.5 inch disc drive for the machine selling at £99. It'll be interesting to see just how good this beefed up Speccy is going to be.

● That picture: who wears the trousers in this company?

Hello, Darlings

Codemaster's publicity pics are famed throughout the industry for their complete awfulness. The ones you've seen up until now pale into insignificance when compared to their latest snap entitled "Codemaster's II".

It features the whole Darling clan, with a few outsiders thrown in to make up the numbers, in a suitable team photo style. Hopefully, the game it publicises, *4 Soccer Simulators*, will be better.

It is the first release on the new Gold Label which means it'll cost £8.99 on tape and £12.99 on +3 disc. The package includes 4 different soccer games and features simultaneous 4-player action.

Other releases from the masters of code include *Pro Skateboard Sim* and *Pro Rugby Sim* both are selling at the more traditional £1.99 price. The latter's good fun, and includes most of the features from the real thing like scrums, lineouts, conversions etc and a few features which aren't but have been included anyway.

It's not very realistic (I can't remember seeing Russia at Twickers!) and I should know having played the game and have got the scars and various odd shaped pieces of anatomy to prove it.

If you've got any tips, pokes, comments and generally anything you'd like to pass on to the rest of Spectrumland, please write to me c/o Express.

Robin Alway

Come back, Sir Clive!

Amstrad never have seemed to like the Speccy much. Take this Christmas, for example, a time where 8-bit computers will have to offer good value for money to tempt punters away from the ST and Amiga.

That nasty Mr Sugar hasn't announced any price reductions or special deals, which means, as far as I'm aware, the +2 will retail for £130 and the +3 at £200. Even to my untrained business eye it sure don't look to be a good deal, especially when Commodore are selling the C64 with games and a personal stereo for £150. Perhaps more attractive to the first-time buyer are the Sega and Nintendo consoles.

You can't play anything which needs more than joystick waggling and fire button pressing but the string of arcade titles and excellent graphics are sure to prove tempting. Where's Uncle Clive when we need him?

TO ALL SEGA OWNERS

Hello!

My name is Tony Takoushi and I will be running the Sega Club with the help of the delectable Manolya (more on her later!)

The club has been set up to give Sega console owners the very latest news on happenings in the Sega world, this will include news on the latest hardware (joysticks, 3D glasses and light gun to name a few), software and THE ARCADES!!

As you are probably aware Sega is NUMBER ONE in the arcade world with hits like Space-Harrier, Outrun, Hang On, Thunderblade and the latest smash hit Afterburner. In coming months there will be promotions for arcade merchandise including T-Shirts, stickers, badges and sweatshirts from Sega arcade hits.

Each issue of the newsletter will feature news, reviews, competitions and club promotions. Each issue will feature an EXCLUSIVE review of a new Sega game, the hit coin-op Thunderblade is featured in this issue. So if you want the latest news and reviews join the Sega Club! When you have registered as a member of the Sega Club you can ring in to the Sega Hotline with any questions you may have about the club or get the latest news. You can also leave your high score and if it is good enough it will be listed in our Master Blasters list in coming issues!!

Both Manolya and myself will be manning the Hotline and if you happen to be stuck at a certain point in a game then use the Hotline for some tips, we are here to help you.

A national network of user groups will be set up, BUT IT WILL NEED YOUR SUPPORT!! I am looking for Sega owners to set up local clubs around the country and I will attend your club nights and tell you all about the latest games and maybe even demo the latest prototypes to hit the UK as well as giving you special Sega merchandise. Club visits will be feature articles in future issues of the newsletter, so now is your chance to be famous, get a club going and let us know!!

The Sega Club is being set up FOR YOU, so do write in and tell us what you want to see or if there is anything you do not like.

So do not waste any more time...fill in your details below!

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SECTOR 64 SECTOR

Soap-box

Ever since the ST and Amiga became popular, software companies have classified the Spectrum, CPC and C64 machines into one group known as 8-bit – with the result of very 'similar' software being produced across the range.

This can only be bad, because all machines have their own strengths and weaknesses, and by writing software to the lowest common denominator, users are being denied the chance to sample their machine's potential.

(This factor has even started to be felt by Amiga users, whose software is tending to be limited to the ST's capabilities, and the situation is likely to worsen if the PC takes off as a games machine – Amstrad feels confident that it will!)

The only benefit in software houses working this way is that it allows quick conversions across all formats. But at what cost to quality? If you agree with me, why not write to software houses and tell them.

There ends complaint of the week – honest!

Game of the week

The game I've been playing all week is *The Last Ninja 2* by System Three. It's a fantastic blend of arcade adventure and beat-em-up. Its superb visuals really conjure up a film-like atmosphere – with some of the best sprites and backdrops I've seen on any home computer (Amiga included!). Audio quality is also high with some great soundtracks during play – pity about the lack of sound effects, though.

My only reservation concerns *TLN2*s 'free' extra goodies – some software retailers (including Boots) are refusing to stock versions of *TLN2* containing the rubber Shiraken Star because of fears of younger customers using it to do someone a nasty. As far as I'm concerned it's a waste of money and no doubt partly to blame for the higher than normal price of £13 on cassette (£15 on disk).

Software companies should spend less time thinking about new marketing strategies and more time developing original software with improved gameplay and audio-visuals.

But despite the silly extras, I still believe *TLN2* to be one of the best C64 titles released this year.

Cry from the heart

Humble apologies to all, I'm afraid I'm just too lazy to produce C64 game hints, tips and pokes all by myself – this is where you come in.

Send me views, news, hints and tips, pokes, machine code/basic routines, demos, fanzines and anything else you'd like to see in this column and I'll share it with your fellow C64 users.

The address is at the bottom of this column.

C64 budget game of the week

There doesn't seem to be much space for budget games in the rest of the magazine, so here's a mini review of a *Slayer*, a cracker from Hewson that costs just £2.99.

- **GAMEPLAY** A great horizontally scrolling shoot'em-up in the *R-Type* tradition, it even looks and feels (no pun intended!) like *IO* from Firebird – another *R-Type* clone.
- **GRAPHICS AND SOUND** Brilliant sprites and backdrops complemented by smooth animation and good use of colour. The sound effects are functional and are accompanied by a faithful rendition of The Human League's *Blind Youth* soundtrack on the title page.
- **OTHER VERSIONS** Who cares? (Only joking, but this is Sector64 after all).
- **PERSONAL VERDICT** Although *Slayer* is a hard game to play, a touch of perseverance will take you through some really great screens – and is one to look out for the next time you visit your local software dealer.

✪✪✪✪

C64 utility of the week

If you've been having problems with your 1541/71 disk drive lately you'll probably be interested in the disk alignment package from Financial Systems Software Limited. The package consists of software – which gives an on-screen status report as you realign the drive – and comprehensive manual which details all the procedures involved. Further details from FSSL, 18 High Street, Pershore, Worcs, WR10 1BG. Telephone: (0386) 553153

Going international

The long-awaited *Rocket Ranger* from Cinemaware is due for release in the USA at any time soon, with Mirrorsoft set to launch the game over here shortly afterwards.

Also for imminent USA release is *Street Sports Baseball* from Epyx – watch this space for information on the UK release date.

Meanwhile my award for the best demo of the week goes to *Toaster* by a Denmark crew called Upfront. It features terrific examples of full-screen raster bars, a massive sprite-multiplexer and some pleasant soundtracks. Hey, guys, why don't you try a real game?

Infinite lives for Radius

A couple of good tips on a great little budget game from Players called *Radius*:

- While the game loads, keep the space bar pressed – when the game has finished loading you'll be rewarded with a secret demo.
- For infinite lives type "MEANTEAM" in the hall of fame.

Snippets

Releases to look out for in the coming weeks:

Exploding Fist Plus ● Firebird ● £9.99cs, £12.99dk

The sequel, to the sequel, of the successful beat'em-up originally from Melbourne House (before Mastertronic bought them up), now coming from Firebird sometime this month.

The In Crowd ● Ocean ● £12.95cs

A 'crucial' compilation containing some very popular titles of recent times: *Target Renegade, Platoon, Combat School,* Palace *Barbarian, Predator, Gryzor, Crazy Cars* and *Karnov* – out at the end of this month.

Savage ● Firebird ● £9.99cs, £12.99dk

Despite the dodgy advert (remember the one with that stupid wimp of a kid transformed into a muscle man by playing this game), *Savage* represents a variety of different playing styles and viewpoints – each one containing wonderfully bright and colourful graphics matched by some competent sound effects. It should be available as you read this.

Sign-off

Just a reminder about the Commodore Show next week (preview on page 23). Hopefully I'll be able to give you a run down on the show in a couple weeks' time – in the meantime keep those letters, hints and tips, etc rolling in to: **Sector64, New Computer Express, 4 Queen Street, Bath BA1 1EJ.**

Rik Haynes

CPC centre

Launching at half-cock

I wonder what's behind the new CPC marketing drive – which was, incidentally, launched at the same time as the lame PC200 (hardly perfect timing)? To recap, the deal is a 464/6128 (colour/green monitor) for £100 over the odds. To balance the equation, Amstrad are throwing in a computer desk, a clock/radio and a tuner for the monitor, so you can use it as a TV. Finally, seventeen so-so games (among them *Monopoly, Scrabble, Cluedo, Trivial Pursuit* – all Christmas time-killer boardgames in a previous existence) are crammed into the box.

There's something distressingly half-hearted about this 'Entertainment Centre'. It sneaked in at the PC Show without a proper introduction, and Amstrad hasn't exactly gone overboard to explain things to the press (it's still not been announced whether the components will be available individually, for example).

Or perhaps it's just that Amstrad aren't the most adept of media manipulators – Sugar's tiresome computer press paranoia is surely a hangover from the early days, and it's time he outgrew it.

Help!

On a similar note, the Brentwood brigade has had another 'Oh but we are supporting customers, honest guv' idea. It's a new bulletin board (0277 231276, V21, V22, V22 Bis and V23 Baud rates) for people with Amstrad computer faults. Picture the scene: your computer won't work. So you try to dial into the Amstrad help line – except you can't, because you're computer's knackered. Nice one: now how about a customer support division, where you can send a machine and have it repaired?

Amstrad's figures

Amstrad's latest annual sales report makes interesting and on the whole encouraging reading for CPC users.

For one thing, Chairman Sugar is at pains to stress that Amstrad 'does not survive on new products alone'.

For another, in Spain the CPC played its part, Sugar says, in a massive 74% growth of turnover.

Roll on the Single European Market!

Nice little earner

Now here's something you never knew you needed: *Football Manager II Expansion Kit. FM II*, you'll recall, is a fairly typical management game in which you employ football tactics and financial juggling to move a team from the fourth division to the first, winning trophies as you go. With the new *Expansion Kit* you can: **change** player and team names, **alter** colours, **choose** starting division and even **decide** how many points are awarded for wins and draws. Supplied on cassette (£7) or disk (£10) as part of the expansion kit are a set of saved games already set up for the Scottish, Italian, French and World leagues.

What effect does this have on gameplay? Very little, since changing player and team names should have been a standard feature of the original. Come to think of it, all of these 'extra' features could quite easily have been supplied with the original game. It effectively makes *Football Manager II* cost £17 or £25.

Any day now

Gremlin's latest is *Artura*, in which you get to play title role in the rescue of Nimue from your evil half-sister Margause. This hocus pocus takes place in and around a fifth century castle occupied by ghouls, spiders, soldiers and rats, but not necessarily in that order.

Leaderboard has been around for donkey's years in countless incarnations, and shows no signs of expiring just yet. Now there's *World Class Leaderboard, Famous Courses of the World: Volume 1*, four more courses to keep the avid computer golfer busy for a while. The worrying thing is that bit about 'Volume 1'...

US Gold's big release for Christmas is *Thunderblade*. At least if it isn't they've wasted a whole heap of money advertising it (not that uncommon, come to think of it). It's a conversion of the arcade game: you fly around in a helicopter blasting baddies into lots of little pieces etc, etc. Not the most original concept ever, but it'll sell: arcade licences always do.

Incentive go for hat trick

The big game of last year, released to ecstatic reviews just in time for Christmas, was Incentive's *Driller*. Set on Mitral, a satellite of the planet Evath, the mission was to drill for pockets of gas on the moon's surface, thereby releasing it and saving the mother planet. The puzzles and hazards were tough enough to challenge the wiliest of players, yet with sufficient encouragement to make you play 'just once more'. And when you'd begun to despair of ever finding half the gas build-ups, you discovered the jet, which suddenly transformed *Driller* and gave you another dimension to move in.

But what really made this game special was the much vaunted *Freescape*, a technique which allowed the creation of solid 3D landscapes you could explore and – if you were not careful – crash into.

Then in the summer came *Dark Side*, set on Evath's other moon Tripuscid some 200 years later. This time round the time limit was tighter and was almost (but not quite) impossibly difficult. The only criticism anyone could find for *DS* was that it was 'not-quite as original' as *Driller* – not surprising, since it too used *Freescape!*

Now comes *Total Eclipse*. It's set in Egypt in the 1930's, and Incentive's Ian Andrew promises 'weird hyroglyphics, giant pyramids and a strange curse' (what, the return of *Psycho Pigs?)* under an ever-darkening sky. Andrew likens the game to *Indiana Jones in the Temple of Doom*, with 'poison darts, revolvers and treasure chests'. We're promised more locations (about 50) and faster movement, and Incentive claim to have learned a great deal from the previous two *Freescape* epics. Can Incentive make it three in a row, or will this latest release signal an eclipse (sorry) in their fortunes?

The rumour and the denial

"Definitely not," asserted Database boss Derek Meakin when asked by us if he was about to close his magazine *CPC Computing*. Our phone-call was prompted by widespread rumours that the title is about to be killed off – or, much the same thing, incorporated into its sister publication *Amstrad Computer User* (published by a Database subsidiary).

Meakin's denial contradicts well-placed CPC sources who say the decision has already been taken. Whatever the case, an announcement is expected soon on the future of at least one of Database's magazines. Watch this space.

Steve Carey

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PCW PATCH

Locomotive steams ahead

The future of PCW software looks to be in the hands of Locomotive Software, writers of *LocoScript 1*, responsible for virtually all major releases for the PCW this year.

enildeaH cibarA nA

Locomotive have never worried about going for markets hitherto thought obscure or unrewarding – vide Welsh, Arabic and Urdu versions of LocoScript 2, which could already cope with languages like Russian, Greek and Mathematics.

"The Arabic version was developed for a specific order we had," explained Fisher, "and so we decided to add Arabic/Urdu to our commercial range. There's certainly a big market there."

The launch of the program (in which the cursor progresses right-to-left across the page, instead of English's left-to-right) is being delayed while Arabic script academics argue over the correct forms of the characters.

The Welsh version followed complaints from irate Welsh users who couldn't get a w-circumflex in the standard version, but sales so far "have been pathetic" lamented Fisher.

Latest is *LocoFile*, their database add-on to *LocoScript 2*. It's the first mainstream addition to the *LocoScript* family since version 2 of the word processor was launched last June.

Loco 2 still isn't a lightning fast program, but comfortably faster than *LocoScript 1* (shipped with the 8256s and 8512s) if only in geological timescales. Locomotive see *Loco 2* (shipped with 9512s) as the 'real' version of their word processor and all their new products work exclusively with that.

"*LocoScript 1* is an outdated product as far as we're concerned," said marketing man Howard Fisher.

LocoFile was brought out purely in response to user demand, he said. It is geared to a name-and-address storing letter writer. The setup of a database can be changed at will after setting it up and data files can be squashed to make most effective use of space. Cards can be called up on screen while editing a document, items of information can be cut from the cards, made into blocks as usual, and copied back into the document. File size is unlimited and up to eight simultaneous indexes can be kept. It's fast, menu-driven like *LocoScript* and very easy to use, but many functions (sorting into groups, printing reports, calculations) have to be done with *LocoMail*. "We didn't want to duplicate the functions of *LocoMail* in *LocoFile*, but we did make data files from either program usable in the other," said Fisher.

Locomotive's current project is their 24-pin printer driver set, enabling you to print out all those Cyrillic, Greek and mathematical characters in glorious 24 pin detail. What next – *LocoSpread*, *LocoDraw*, *LocoAccounts*? "Well, let's just say that the most enquiries we've had lately are on a PC version of LocoScript" he said. *LocoFile* is £29.95 from Locomotive on 0306 740606.

Rob Ainsley

QL corner

The emulation game

With the Atari ST now running a creditable QL Emulator and the QL running a CP/M Emulator, news is of a PC emulator for the QL in the final stages of polishing.

It is the lack of volume of some forms of business and bespoke software which is the biggest frustration to QL users, and this emulator may be the best solution.

The writers have employed some ingenious tricks to speed up the resulting product on the QL. It appears DOS spends a lot of its time doing error checking and housekeeping which would be taken care of by the native QDOS built in to the QL anyway, so a large part of the normal DOS kernel is redundant.

The QL was offered with the Psion suite as an all-in package and as a result there was never any market in the formative years for alternative spreadsheet/database systems.

The major software item to influence QL development has been the *Superbasic* compilers. This emulator, when released, will equal their impact.

Discover DiscOVER

DiscOVER is a utility that is a lifesaver to those who need to transfer data from QL to PC and/or back. Transfer is a simple matter of putting a QL disk in one drive and the PC disk in another. The copy is as efficient and swift as the QL standard file-to-file copy. GONE are my days of soldering iron and RS232, parities and stop bits, trying to get two machines to converse!

The most effective method I've used involved a Psion Organiser as an intermediary – a simple but drastic solution. As the ultimate test I have succesfully moved a cross-compiled binary file from an Apricot to aUnix mini - passing it through the QL in the process, and having it run first time! Full details from PDQL on 021-200-2313.

Paul Connell

QL's European future

Quanta, the QL user group, held a very well-attended workshop in Northampton over the weekend of 14th/15th October. Present were most of the major software houses and programmers well-known in the QL field. Tony Tebby of Qjump took part, effectively scotching rumours of his total withdrawal from the QL arena.

We may not see much in the way of new products from that direction, but support remains and the company is clearly still doing good business.

Also clear was the uncertainty, to say the least, about the future of the Thor. This has made many a software house look carefully at its investment in the QL.

It may well be that the lead for QL development will come from Europe. The buy-out of Sir Clive resulted in a major offloading of overstocked QLs onto the European market. A couple of years on, those eggs have hatched with a core of enthusiastic European & Scandinavian users producing a lot of the new software and hardware offerings now becoming available.

Some QL Bulletin boards often resemble the Tower of Babel where two Dutch or German contacts maintain their messaging, both phoning in from overseas!

BEEB BOX

Hello, and welcome to the brightest weekly column for owners of all BBC machines everywhere, be they Model B, B+, Master 128, or Acorn Electrons. News, views, and opinions (especially opinions). Let's get on with the column.

Liquid refreshment

Hot off the presses we have the Water game from CWDE software. No it's not a recreation for tired executives, but an educational program designed to stimulate awareness of water use in the third world. Part of the proceeds are going to the charity Wateraid. Details from: Elizabeth Segall, CWDE Computer Project Coordinator, Regent's College, London, NW1 4NS Tel 01-487 7410.

Well done, Danny

Even hotter off the presses is the result of the 1988 Schools Design Prize competition organised by the Design Council. Daniel Dalton, a pupil at Robert May's School Oldham designed a tool to speed up the production of circuit boards, as part of two GCSE courses he was studying. The drill is controlled by a BBC Master computer running a mixture of BASIC and Machine code. Daniel wins a prize of £200, plus £200 for his school.

Castles in the air

Data Design have launched their *Designer Castles* pack, as a link between computer design, printer and paper. This is not a totally new idea, however Designer Castles takes the idea further than ever before, and they've labelled the concept Printware.

The designer creates complete ready to build plans with tabs for gluing, and everything you need to create your own castle. Once you've invested in Printware, the same support ROM can be used with additional disk-based packages. Details from:
Data Design, 'Gowanbank', 3 Botham Hall Road, Longwood, Huddersfield, HD3 4RJ.
Tel 0484 653176.

Domesday eruption

Just room to mention the BBC interactive Television unit who have scooped another award with their latest production, Volcanoes.

Running on the Domesday hardware, Volcanoes is a videodisc about, well volcanoes actually. The award is called a Nebbie (no I've never heard of it either), and following on from the Domesday project and Ecodisc it gives the team a 100% winning record.

Well done, lads.

Master-botch

Did you visit the PC show recently? If so what was your reaction to Acorn's stance on supporting the Master series of computers? Chances are that like me you thought the whole thing stank, and the smell wasn't roses. So let's have those reactions please, be it a brief note, or any angry polemic, we want to hear it. Send your letters in and let us know what you, the real user thinks.

Andrew Brown

MSXTRA

While stocks last...

When you own an MSX computer in the UK, you find that apart from one or two user groups, you are very much on your own. This is especially the case if your computer's for small business or home office use.

Some users even complain about the availability of games software, but if you know where to look this shouldn't be a problem. Even as I write there are over 300 games titles available in the UK, and the number of games released here since the MSX was launched must be approaching the 1000 mark.

Good business software is far thinner on the ground. Programs designed to run on the MSX 1 range are fast disappearing from stockists' shelves.

For example, Kuma have already sold off all their existing MSX titles. If you are interested in a particular Kuma product, e.g. *Forth*, *Logo*, *Word Pro* or *Home Budget*, I suggest you buy now before stocks are exhausted.

MSX 2 owners will, I believe, find a steady increase in the amount of serious software available for their machines. I hear that in Germany *Dbase 2* has been available for some time and is now priced at 50DM, and a new version of CP/M 2.2 (or maybe CP/M plus) is also available, price not yet known. When you consider that these MSX 2 machines are not officially available in the UK it is amazing how much software is written in English. Germany definitely seems to be the place to shop if you want serious software.

MSX 2 computers are still available in the UK. Unfortunately, the Sony models appear to have sold out, but the Phillips MSX 2 machines, such as the Phillips 8245, which has the built-in disk drive, is priced at £350 + VAT.

The cheaper Phillips machine, the 8220 (no disk drive) is priced at about £199 + VAT.

Hard driving

More news on the hard disk drives for the MSX range of computers. It seems that the company selling these drives is based in Holland, and the normal purchase price is estimated to be around £400.

Now it looks like these drives will not be available until the end of the year, so watch this space for a release date.

1 into 2 will go

For those of you who are lucky enough to own an MSX 2 machine, but are having trouble loading MSX 1 tape software, here are some pokes that might help...

Firstly, the Sony. Disable your disk drive, screen 0, select 40 column screen, type in &hffff,&hff then type in Poke 1,225 or, if that poke does not work, Poke 1,253.

The poke for the Phillips MSX 2 is Poke 65535,170. Load the game in as instructed. These pokes cannot be guaranteed to work, but are worth trying.

Here is a poke that will speed up the disk drive of the Sony MSX 2 computer – Poke &HFD9F,201. This will lose you the verify section in Basic though.

Keith Neal

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A last look at the week's events, by cynical old hack *Private I*

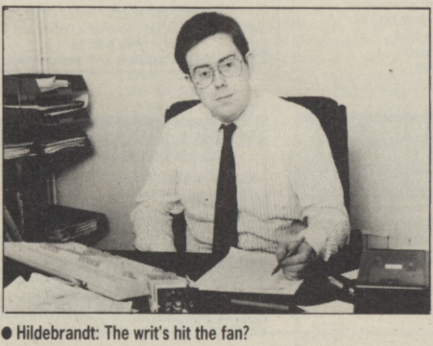
The writ stuff

One of the things that makes this industry truly great is its abiding ability to keep lawyers employed. These poor briefs would be all but unemployed were it not for the absurd wrangles that all computer firms are obliged to enter into at least five times a year.

So it comes as no surprise that m'learned friends are currently being consulted about the defunct budget label The Power House. You remember the outfit: forever banging on about selling several hundred thousand games right up to the point where it went bust, having sold at least - ooh, a few dozen of its £1.99ers.

What is now being considered by disk supplier SJB is a fraud prosecution against boss Ashley Hildebrandt, after some interminable row of the "cheque's in the post" variety.

Young Ashley denies all. SJB is sticking to its guns. Meantime, the lawyers grow fatter.



● **Hildebrandt: The writ's hit the fan?**

Never send a boy to do a man's job, dept:

Now this is tough stuff. Firstly, imagine that you are Amstrad (yep - put on the beard, adopt harsh tones, start swearing, etc, etc). Then set up a Bulletin Board Service (clue: get someone technical to help). Now the difficult bit: what do you run it on? Obviously an Amstrad, you'd think. Maybe a 1512 (if you can get one), perhaps a 1640, or even a PC 2000.

Not quite. If you really were Amstrad, you'd've used an Opus. Honest. That's what they're doing. And far be it from us to say anything about belief in your own product, reliability etc etc...

And the Meek shall inherit...

Once upon a time, there was a character called Mike Meek. He built up the games software company Mikro-Gen into a decent size - despite bonkers forays into hardware with Mikro-Plus - and was duly taken over by would be computer giants CSD. In the way of these things, CSD promptly went bust. Meek lost his firm and his fortune.

These days, he has gone back to basic and is to be found running six software market stalls in the Thames Valley. Sadder but wiser, he has taken solace in the fact that bawling out your wares is far less damaging to your wealth than wearing out your - er, bank balance running a software publisher. ●

● ***Ho-ho, look what I've found on the editor's word-processor. It's little discoveries like this that make all the late hours I put in alone at the office worthwhile. If my column isn't here next week, please send your contribution to:*** *PSSsst Defence Fund, New Computer Express, etc.*

MEMO

Private and Confidential:
From: Launch Editor Chris Anderson
To: New Computer Express Machine-specific columnists

Well done, chaps on your first contributions to Express. I thought you'd be interested in my personal review of your efforts together with a five-star rating. Oh, and get 'em in on time next week, eh?

PC UPDATE: Remarkable story about Freefone USA – have you got shares in that company by any chance? The stuff I put in this issue's letters page re the bribe is just a joke by the way – it was actually me who kept the £50 note. ★★★★

ST CLUB: Brilliant column, Richard, but your rates are far too high. How am I supposed to keep the cover price to 48p? ★

AMIGA BLITZ: Jason, what on earth makes you think Amiga owners are interested in music? Or in Arthur C Clarke for that matter? How about tips on Interceptor? I'm stuck under the bridge. ★★

QL CORNER: I don't think any normal person would understand a word you said. But then, would a normal person buy a QL? ★★★

CPC SCENE: Good first effort, Steve, including fearless criticism of Amstrad themselves. Bit games-biased though. And you were too easy on Meakin. It's obvious the man is bluffling. ★★★

BEEB BOX: Too short. ★★

SPEX: Too long.★★★

PCW PATCH: Sorry, Rob, I don't think anyone will get the Arabic headline joke. And a bit less of Howard Fisher next time please. The chap's quite rich enough as it is. ★★★★

SECTOR 64: You're fired.★

MSXTRA: Yours was the only copy that arrived on time. I just hope you're right in thinking there's another MSX owner out there to read it. ★★★★★

Hype springs eternal

Here's the first in a series of easy-to-enter (but impossible to win) competitions in which you have the chance to prove that you really understand the meaning of common computing terms.

This week: The Computer Games Market. What do the following mean?

1. "Our new game has Cartoon-like graphics"?
a) Our new game has wholly mystifying blobs b) We're lying c) We have a profound understanding of the function of irony in an all too serious environment (ie, b).

2. "Quite a good game"
a) I'm a pathetic wimp writing in a limp-wristed monthly b) I am ever so slightly aware of the possible connection between a bad review and the loss of ad revenue.

3. "This is an extremely important technological breakthrough"
a) It actually works b) It's not from Sinclair Research c) It's infinitesiminaily boring, but we've all got to make a living.

4. "It's so good we could've released it as a full-price title"
a) I'm a pathological liar b) Full price to us means £1.99 c) It's got Simulator in the title and I work for Codemasters.

5. "We've been working on this for 300 man years"
a) 3,600 people could only stand the firm for a month b) 7,200 people could only stand the firm for a fortnight c) It's an utter lie.

6. "Our products have a long shelf life"
a) They don't sell b) They're educational titles, but I daren't say that c) both.

7. "You really do get an awful lot of extra goodies in the box"
a) Er, we're not exactly terrifically confident of the game itself b) We've cobbled together a load of old goo for tuppence and banged a fiver on the price c) It's the same bumf that didn't work last time.

8. "Mega"
a) Unspeakably dreadful b) I'm the hack who swapped his brain for an MSX c) This reviewing lark's money for old rope, isn't it?

9. "Truly interactive"
a) Some twee drivel where you have to pretend you're a goblin b) Some twee drivel where you have to pretend you're not a goblin c) Some twee drivel with absolutely no possible interest whatsoever unless you have very specific sexual desires for er, a goblin.

10. "It's just like flying an F-16 bomber"
a) It isn't b) I'm a psychopathic fascist living out squalid infantile fantasies.

Send your entries on a postcard to PSsst, c/o Express, etc. Alternatively, wait for next week's mega, truly interactive comp...

NEXT WEEK

● **"What's this socket on the back here?" "That's so you can plug in a 64-bit expansion."**
Just one of the unbelievably crass replies given us by a high-street computer department salesman when we went shopping for a computer. We'll be printing some other edited highlights off our hidden tape-recorder. It's all part of a detailed guide to selecting the right computer for you. Don't miss it.

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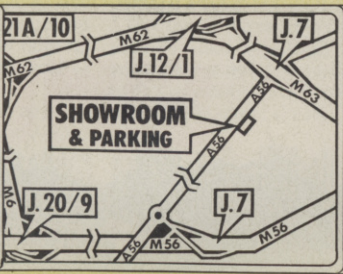
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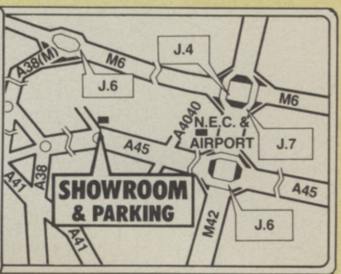
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